DTIC

UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

ENGINEERING
AFSC 3E5X1

OSSN: 2379

NOVEMBER 1999

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OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION and TRAINING COMMAND
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RANDOLPH AFB, TEXAS 78150-4449

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PREFACE

This report presents the results of an Air Force Occupational Survey of the Engineering career ladder, Air Force Specialty Code (AFSC) 3E5X1. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by Mr. Michael Brosnan. Computer programming support was provided by Ms. Jeanie Guesman and Ms. Dolores Navarro provided administrative support. Second Lieutenant Andrew K. Hosler analyzed the data and wrote the final report. This report has been reviewed and approved by Lt Col Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS/OMYXI, 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at http://www.omsq.af.mil.

JAMES M. COLLINS, Lt Col, USAF
Commander
Air Force Occupational Measurement Sq

JOSEPH S. TARTELL
Chief, Occupational Analysis Flight
Air Force Occupational Measurement Sq

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SUMMARY OF RESULTS

1. **Survey Coverage**: AFSC 3E5X1 was surveyed to validate career ladder documents and training programs. Survey results are based on responses from 947 Air Force enlisted members. Study respondents include 716 Active Duty (AD), 154 Air National Guard (ANG), and 77 Air Force Reserve Command (AFRC) personnel, accounting for 62 percent of the total population surveyed.

2. **Specialty Jobs**: Five clusters (each containing at least two separate jobs) and seven specialty jobs were identified, accounting for 90 percent of the survey sample. The clusters and jobs include: Computer-Aided Drafting and Design (CADD) Cluster, Surveying Cluster, Entry-Level CADD Job, Files Job, Surveying Assistant Job, Site Developer Job, Mobility Job, Radar Evaluation Job, Project Management Cluster, Service Contracts Cluster, Supervisor Cluster, and Staff Program Manager Job. ANG and AFRC members perform similarly to AD airmen and are included in most clusters and jobs.

3. **Career Ladder Progression**: Skill-level progression for members of this AFSC is typical. Personnel follow the basic path from entry-level technicians as 3-skill level apprentices to 5-skill level journeymen. As airmen reach the 7-skill level, they become NCOICs or supervisors and accept a more supervisory or management role at the 9-skill level. ANG and AFRC respondents remain slightly more technically-oriented than their AD counterparts, but show a similar progression from the 5- to 9-skill level. Surprisingly, the Surveying Cluster, a generally technical cluster, still contains 36 percent of 9-skill level members.

4. **Training Analysis**: The current STS contains four entries that are not supported by survey percent member performing data. The POI contains ten entries that are not supported. Many tasks not referenced to the STS or POI should be reviewed by training personnel and considered for addition as a performance-coded element.

5. **Job Satisfaction**: Job satisfaction among AFSC 3E5X1 personnel is very good. It compares favorably to ratings from both a comparative sample of career fields surveyed in 1998 and the 1997 AFSC 3E5X1 study. Retention intentions are lower among first- and second-term airmen than in the previous study. Entry-Level CADD Job and Files Job personnel show the lowest overall ratings. Retention is a potential issue as members of the technical core clusters (CADD and Surveying) show fewer than half reenlisting.

6. **Implications**: Survey results indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed by members of this career ladder. ANG and AFRC airmen perform more technical tasks on average than their active duty counterparts at more advanced skill levels. The STS and POI contain entries that lack survey percent members performing data support. Retention intentions among the first- and second-enlistment members are lower than the 1997 AFSC 3E5X1 study.

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OCCUPATIONAL SURVEY REPORT (OSR)
ENGINEERING
(AFSC 3E5X1)

INTRODUCTION

This is an Occupational Survey Report (OSR) of the Air Force Specialty Code (AFSC) 3E5X1, Engineering career ladder conducted by the Air Force Occupational Measurement Squadron (AFOMS). Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

Survey data will be used to identify current utilization patterns among career ladder personnel and evaluate career ladder documents and training programs. Data will also be used to aid in writing specialty knowledge tests for the career field. The last OSR published for the Engineering career ladder was April 1997.

Background

As described in the AFMAN 36-2108, *Airman Classification,* 30 April 1999, *Specialty Description* (last changed 31 October 1997), Engineering personnel direct and perform field and technical investigations, drafting, surveying, contract management, and engineering design. Personnel prepare plans, specifications, and programming documents and are responsible for designs and drawings of engineering projects. Members of the career field also inspect contracts, perform field tests on soils, asphalt, and concrete, evaluate conditions and report compliance with environmental regulations, and design and manage projects.

Personnel must have normal color vision as defined by AFMAN 48-123, *Medical Examination and Standards*, and be qualified to operate government vehicles according to AFMAN 24-309, *Vehicle Operations.* Entry into this career ladder currently requires an Armed Forces Vocational Aptitude Test Battery (ASVAB) score of General – 48, while a strength factor of "G" (Weight lift of 40 lbs) is also required. Completion of the basic engineering course and courses in algebra, trigonometry, and geometry is mandatory for personnel entering the career field.

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SURVEY METHODOLOGY

Inventory Development

This survey instrument was developed to include the tasks performed by AFSC 3E5X1, Engineering personnel. The data collection instrument for this occupational survey was USAF Job Inventory (JI) Occupational Survey Study Number (OSSN) 2379, dated March 1999. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 17 subject-matter experts (SMEs) at the following training location and operational installations:

BASE	UNIT VISITED
Ft Leonard Wood MO	Det 7, 366 TRS
Hurlburt Field FL	16 CES and 823 RHS
Eglin AFB FL	96 CEG

The resulting JI contains a comprehensive listing of 466 tasks grouped under 14 duty headings, and a background section requesting such information as grade, base, MAJCOM assigned, and organizational level. Additional background questions included types of Computer-Aided Design and Drafting (CADD) system and surveying software programs used, number of hours spent on additional duties, and number of days spent on temporary duty (TDY) in support of contingencies. Other background questions requested information about professional courses completed, equipment used or operated, and job satisfaction.

Survey Administration

From March - July 1999, base training offices at operational units worldwide administered the inventory to eligible AFSC 3E5X1 personnel. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX. Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount time spent). To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task.

This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Table 1 reflects the percentage of distribution, by Duty AFSC (DAFSC), of assigned AFSC 3E5X1 personnel as of March 1999. The 947 respondents in the final sample represent 56 percent of the total assigned personnel and 62 percent of the total personnel surveyed. Table 2 reflects the paygrade and MAJCOM distribution for this study.

TABLE 1

DAFSC DISTRIBUTION OF SURVEYED PERSONNEL

DAFSC	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
3E531	16	20
3E551	48	47
3E571	32	29
3E591	4	4

TOTAL ASSIGNED* = 1690
TOTAL SURVEYED** = 1518
TOTAL IN SURVEY SAMPLE = 947
PERCENT OF ASSIGNED IN SAMPLE = 56%
PERCENT OF SURVEYED IN SAMPLE = 62%

* Assigned strength as of March 1999

** Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job

TABLE 2

PAYGRADE/COMMAND DISTRIBUTION OF SURVEY SAMPLE

PAYGRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
E-1 – E-3	17	20
E-4	18	17
E-5	26	25
E-6	18	17
E-7	16	16
E-8	5	5
COMMAND	**PERCENT OF ASSIGNED**	**PERCENT OF SAMPLE**
ACC	16	19
ANG	27	16
PACAF	10	13
AMC	9	11
AFMC	8	10
AFRC	11	8
AETC	6	7
AFSPC	5	6
USAFE	5	5
Other*	3	5

*"Other" includes 11th Wing, AIA, AFSOC, and several other commands and agencies

As can be seen from Tables 1 and 2, the DAFSC, paygrade, and active duty command distributions of the survey sample are reasonably close to the percent assigned. This indicates a high probability that the survey is an accurate representation of the respective populations for the

career ladder. Most analyses have been run separately for Air National Guard (ANG) and Air Force Reserve Command (AFRC) airmen.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 3E5X1 personnel (generally E-6 or E-7 craftsmen) also completed a second diskette for either training emphasis (TE) or task difficulty (TD). These diskettes were processed separately from the JIs. This information is used in a number of different analyses discussed in more detail within the report.

Training Emphasis (TE): TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 56 senior NCOs who completed a TE diskette were asked to select tasks they felt require some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 0 (not important to train) to 9 (extremely high emphasis). Structured training is defined as training provided at resident training schools, field training detachments (FTD), mobile training teams (MTT), formal on-the-job-training (OJT), or any other organized training method. The interrater agreement for these 56 raters was acceptable. Personnel generally agreed on which tasks should be rated highest in training importance. The average TE rating for AFSC 3E5X1 was 2.57, with a standard deviation of 1.63. These numbers mean that any task with a final TE rating of 4.20 or greater is considered to have a high TE and is important to train.

Task Difficulty (TD): TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. A total of 51 senior NCOs completed TD diskettes. Those 51 raters were asked to rate the difficulty of each task using a 9-point scale (extremely easy to extremely difficult to learn). Interrater reliability was acceptable. Respondents generally agreed upon the difficulty to learn the tasks. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, TE and TD ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. The Comprehensive Occupational Data Analysis Program (CODAP) assists by creating an individual job description for each respondent based on the tasks performed and relative amount of time spent on these tasks. The CODAP automated job clustering program then compares all the individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, CODAP either adds new members to this initial group, or forms new groups based on the similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the ***Job***. When two or more jobs have a substantial degree of similarity, in tasks performed and time spent on tasks, they are grouped together and identified as a ***Cluster***. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, five clusters and seven independent jobs were identified within the career ladder. Figure 1 illustrates the clusters and jobs performed by AFSC 3E5X1 personnel.

A listing of the clusters and jobs is provided below. The clusters are shown with their respective jobs as points A, B, or C. The stage (STG) number shown beside each title references computer-printed information; the letter "N" indicates the number of personnel in each group.

I. COMPUTER-AIDED DESIGN AND DRAFTING (CADD) CLUSTER (STG055, N=136)
   A. ENGINEERING SUPPORT JOB (STG147, N=7)
   B. CONTINGENCY CADD JOB (STG092, N=15)

II. SURVEYING CLUSTER (STG099, N=333)
   A. SURVEYING JOB (STG124, N=210)
   B. SURVEYING NCOIC JOB (STG112, N=123)

III. ENTRY-LEVEL CADD JOB (STG072, N=6)

IV. FILES JOB (STG090, N=7)

V. SURVEYING ASSISTANT JOB (STG077, N=21)

VI. SITE DEVELOPER JOB (STG094, N=5)

VII. MOBILITY JOB (STG107, N=8)

VIII. RADAR EVALUATION JOB (STG224, N=7)

IX. PROJECT MANAGEMENT CLUSTER (STG057, N=207)
   A. PROJECT PROGRAMMER JOB (STG082, N=9)
   B. CONSTRUCTION INSPECTOR JOB (STG080, N=8)

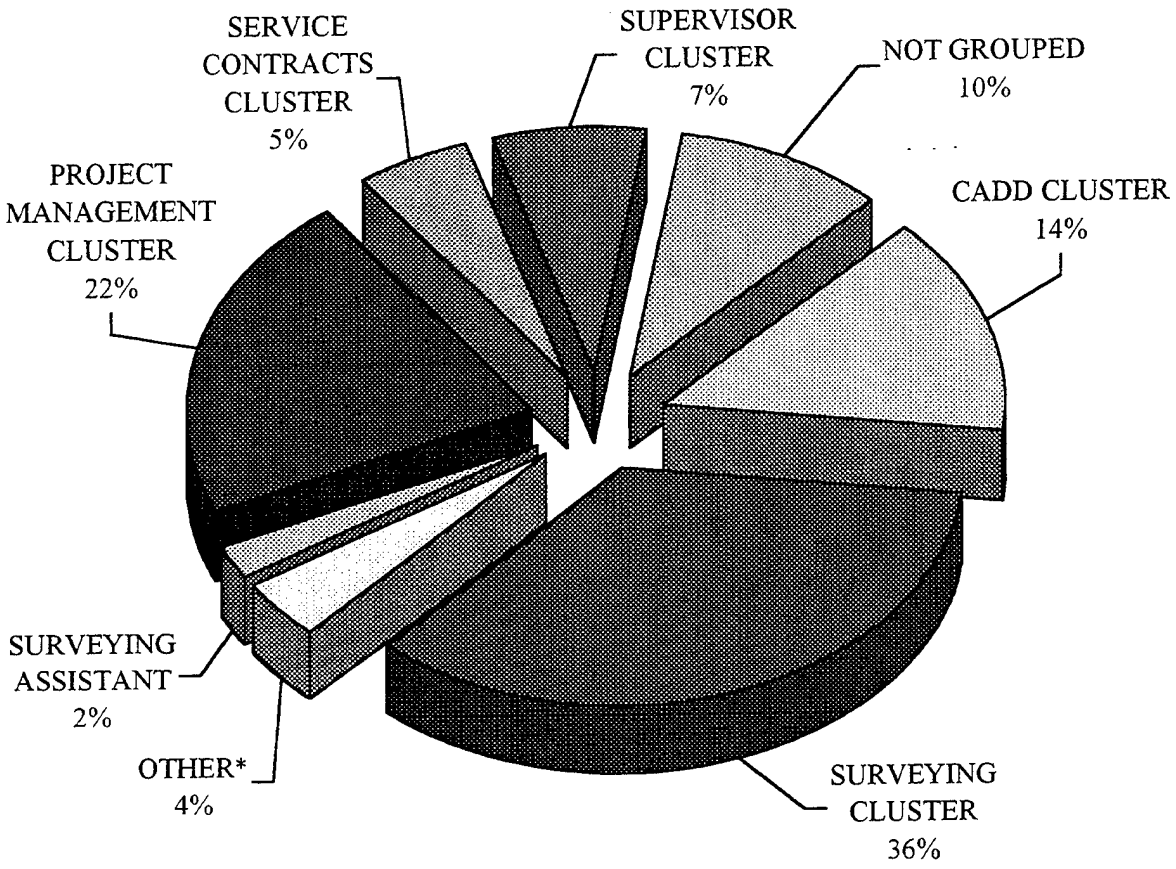
X. SERVICE CONTRACTS CLUSTER (STG091, N=49)
   A. NEW CONTRACTS JOB (STG118, N=27)
   B. EXISTING CONTRACTS JOB (STG115, N=22)

XI. SUPERVISOR CLUSTER (STG047, N=68)
   A. CONTINGENCY MANAGEMENT JOB (STG121, N=7)
   B. MOBILITY SUPERINTENDENT JOB (STG088, N=5)
   C. RESOURCES MANAGEMENT JOB (STG131, N=46)

XII. STAFF PROGRAM MANAGERS JOB (SGT069, N=5)

The respondents forming the clusters and jobs account for 90 percent of the survey sample. The remaining 10 percent of the surveyed personnel were not grouped similar to other personnel. Job titles for those personnel not grouped include Utility Manager, Civil Engineering Liaison, Inspector, Instructor, and Geodetic Surveyor, among others.

AFSC 3E5X1 CAREER LADDER SPECIALTY JOBS
(N = 947)



*Other includes *Entry-Level CADD, Files, Site Developer, Mobility, Radar Evaluation, and Staff Program Manager* Jobs

FIGURE 1

Group Descriptions

The following paragraphs contain brief descriptions of the clusters and jobs identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of the specialty clusters and jobs. Selected background data for the clusters and jobs are provided in Table 4. Representative tasks for all the groups are contained in Appendix A.

I. COMPUTER-AIDED DESIGN AND DRAFTING (CADD) CLUSTER (STG055). This cluster is one of the two core technical clusters in the career field. The cluster contains 136 airmen, accounting for 14 percent of the entire sample. CADD cluster members perform an average of 44 tasks. Personnel grouped together because of their heavy usage of CADD system software. Though personnel throughout the career field use CADD for some aspect of their job, these members rely heavily on it. Two specialty jobs (Engineering Support Job and Contingency CADD Job) were discovered within the cluster and will be discussed later in this section. Members of the cluster spend the greatest portion of their time (45 percent) performing the CADD systems activities of Duty C. Their other top duties include Duty A, performing surveying activities, accounting for 17 percent of their time and Duty B, performing manual drafting activities, on which they spend 13 percent of their time. Tasks representative of the cluster include:

- Maintain computer drawing files
- Update as-built drawings in CADD systems
- Update record drawings in CADD systems
- Complete architectural plans in CADD systems
- Develop modifications from existing drawings in CADD systems
- Complete electrical plans in CADD systems
- Complete civil plans in CADD systems

Ten percent of the members of the cluster are ANG members and 2 percent are AFRC members. Personnel mainly perform in the technical skill levels, including 56 percent in the 3-skill level and 38 percent in the 5-skill level. The remaining 8 percent are 7-skill level airmen. Paygrades are also representative of their technical nature; the greatest proportion of the cluster (43 percent) are E-3s, 22 percent are E-4s, and 15 percent are E-5s. The AD members average just over 4 years total active federal military service (TAFMS). Personnel are distributed fairly proportionally over the career field's main MAJCOMs; 26 percent are in Air Combat Command (ACC), 13 percent in Air Mobility Command (AMC), and 11 percent each in Pacific Air Forces (PACAF) and Air Force Materiel Command (AFMC). Only 11 percent are supervisors.

Two groups of airmen differentiated themselves from the core of the cluster. The first job identified within the cluster was the ENGINEERING SUPPORT JOB. Seven airmen grouped into this job due to the additional support and supply tasks they accomplish. They perform an average of 43 tasks. Some of the top tasks which differentiated these airmen are:

- Pick up, deliver, or store equipment, tools, or supplies
- Inventory equipment, tools, or supplies
- Assemble engineering plans or project materials
- Conduct on-the-job training (OJT)

These members include a higher percentage of ANG personnel (43 percent) and the AD airmen are more experienced (8.5 years TAFMS) than the overall cluster. Their training support and ANG membership are the main reasons for the discrimination from the cluster.

The second specialty job identified within the CADD cluster is the CONTINGENCY CADD JOB consisting of 15 airmen. These members average only 33 tasks; those tasks not related to the use of the CADD system are generally dedicated to contingency operations. Some of the top differentiating tasks are seen below:

- Perform crater profile measurements (CPMs)
- Lay out minimum operating strip (MOS) centerlines
- Perform airfield damage assessments
- Select MOS candidates

Seven percent of the members are ANG while the rest are AD. Those AD members average less than two years TAFMS. More support for the job's contingency nature is found within the MAJCOM distribution in which 60 percent of the personnel work for ACC.

II. SURVEYING CLUSTER (STG099). The second of the two technical clusters within the career field, the Surveying Cluster, contains the largest number of members (333 airmen) and is the core of the AFS. Comprising 36 percent of the survey sample, these personnel average performing 112 tasks. These airmen spend much of their time (25 percent) performing the surveying activities of Duty A. Sixteen percent of their time is spent working with CADD, Duty C. The rest of their time is distributed throughout the rest of the duties of the career field; however, they show a certain focus on contingency and mobility as 23 percent of their time is spent on the two duties (I and J) dedicated to those functions. Two specialty jobs within the cluster, representing a technical progression through the cluster, are identified and reported later in this section. Representative tasks performed by these incumbents include:

- Set up or tear down surveying equipment
- Measure horizontal distances
- Interpret engineering sketches
- Record field notes
- Update as-built drawings in CADD systems
- Measure horizontal angles
- Compute horizontal or vertical distances

ANG and AFRC airmen are heavily represented in this cluster accounting for 49 percent of the population. Forty-seven percent of the cluster are 5-skill level members, while 33 percent are 7-skill level airmen and 16 percent perform at the 3-skill level. The paygrade data shows a similarly dispersed distribution; personnel range from E-2 to E-8 with the greatest percentages of airmen holding the E-5 (27 percent) and E-6 (20 percent) paygrades. The active duty members average about 8.5 years TAFMS. The ANG (32 percent) and AFRC (17 percent) top the MAJCOM list, while the top AD MAJCOMs are ACC (16 percent), PACAF (8 percent), and AMC (8 percent). Fifty-one percent of the members supervise at least one other person.

This technical cluster is divided into two specialty jobs which represent the technician and the NCOIC: SURVEYING JOB and SURVEYING NCOIC JOB. The Surveying Job contains 210 members while the Surveying NCOIC Job contains the remaining 123 airmen in the cluster. The differences between the two jobs show the effects of experience. Surveying NCOIC Job members average a higher TAFMS, more tasks performed (157 versus 86), and greater progression through the skill levels and paygrades. While both jobs focus on accomplishing surveying tasks, Surveying NCOIC Job airmen have the added responsibility of training (Duty L, 9 percent of their time) and supervising (Duty K, 18 percent of their time). Since members of both jobs perform the surveying tasks mentioned in the cluster discussion above, top tasks which differentiate the Surveying NCOIC personnel are listed below:

- Conduct on-the-job training (OJT)
- Counsel trainees on training progress
- Determine or establish work assignments or priorities
- Evaluate progress of trainees
- Inspect personnel for compliance with military standards

As mentioned previously, the Surveying NCOIC members are a more senior group. The NCOICs average over 15 years TAFMS while the technical surveyors average only 5.5 years. The technical surveyors are represented most strongly by 5- and 3-skill level members who account for 53 and 25 percent of the job, respectively. Fifty-four percent of the NCOICs perform at the 7-skill level and another 35 percent perform at the 5-skill level. The paygrade data shows similar experience-based differences. Ninety-three percent of the Surveying Job airmen range between E-3 and E-7, with E-5 personnel accounting for the largest group at 29 percent. Ninety percent of the Surveying NCOIC personnel range from E-5 to E-8, with E-7 members accounting for the largest group at 30 percent. Eighty-nine percent of the NCOICs are supervisors.

III. ENTRY-LEVEL CADD JOB (STG072). This specialty job is comprised of only six airmen, representing less than one percent of the survey population. They perform an average of only nine tasks, one of the main reasons for their differentiation. Typically, entry-level personnel in a career field are given fewer tasks to accomplish than technicians who are more senior. Such is the case with these airmen who accomplish the tasks stressed to them at their technical training school. Performing CADD system activities, Duty C, accounts for 66 percent of their time, while Duty A, performing surveying activities and Duty B, performing manual drafting activities account for 14 percent and 10 percent, respectively. Some of the tasks best representative of these airmen include:

- Maintain computer drawing files
- Develop modifications from existing drawings in CADD systems
- Complete architectural plans in CADD systems
- Reproduce drawings
- Draft preliminary designs for architectural plans in CADD systems
- Complete structural plans in CADD systems
- Complete mechanical plans in CADD systems

All personnel are AD members, either holding the E-3 (67 percent) or E-4 (33 percent) paygrade and evenly split between the 3- and 5-skill levels. These airmen average about two and one-half years TAFMS, adding further support for their "entry-level" status. PACAF and AFMC each contain 33 percent of the airmen, while ACC and AETC each contain 17 percent. One of the six members is a supervisor.

IV. FILES JOB (STG090). Similar to the Entry-Level CADD Job, this job also contains a majority of entry-level airmen. Trained at the technical training school to perform manual drafting, these seven members (less than one percent of the survey) are the only grouped members of the career field to focus on manual drafting tasks, and those tasks are only by way of handling or filing. These personnel average only 15 tasks performed, many of which include logging information, maintaining files, and updating records. Duty B, performing manual drafting activities, accounts for 31 percent of their time. These members are dependent upon CADD to complete their jobs, however, as 25 percent of their time is spent on the CADD system activities of Duty C. Other portions of their time is spent on Duties N (11 percent) and A (10 percent), performing general supply and equipment activities and performing surveying activities, respectively. Distinctive tasks performed include:

- Reproduce drawings
- Maintain drawing files, other than computer drawing files
- Identify and report equipment or supply problems
- Maintain computer drawing files
- Prepare drawings for internet web sites
- Transfer drawings to internet web sites
- Update as-built drawings in CADD systems

All members of this job are AD and they average two years TAFMS. Four of the seven members are 3-skill level performers while the remaining three perform at the 5-skill level. Three members hold the E-4 paygrade while the E-2 and E-3 paygrades account for two each. ACC, Air Force Space Command (AFSPC), and AFMC each contain two of these members while the seventh airman is a member of PACAF. Only one of the respondents is a supervisor.

V. SURVEYING ASSISTANT JOB (STG077). Twenty-one members of the career field form this job accounting for two percent of the survey sample. They perform an average of 31 tasks and spend 58 percent of their time working on tasks in Duty A, performing surveying activities. Fifteen and ten percent of their time, respectively, are spent on Duty C, performing CADD systems activities, and Duty B, performing manual drafting activities. These personnel are junior to the Surveying Job airmen in the Surveying Cluster. Members of the Surveying Assistant Job perform many fewer tasks and the tasks performed are kept strictly to the technical surveying tasks taught at the training school. Some tasks that best represent this job are:

- Set up or tear down surveying equipment
- Measure horizontal distances
- Measure vertical angles
- Measure vertical distances or heights
- Measure horizontal angles
- Record field notes
- Compute horizontal or vertical distances

As mentioned above, these airmen perform a minimal number (31) of technical tasks mainly associated with surveying. A large portion of the job is comprised of ANG and AFRC personnel, together accounting for 39 percent of the membership. Among AD MAJCOMs AFMC is the largest employer with 19 percent followed by ACC and AMC each with 14 percent. Sixty-seven percent of the airmen performed at the 5-skill level while the remaining 33 percent worked at the 3-skill level. The average TAFMS for AD members of the job was three years. The paygrade distribution was representative of the short TAFMS: 38 percent were E-3, 33 percent were E-4, and 24 percent were E-5. Only one member of the group (5 percent) is a supervisor.

VI. SITE DEVELOPER JOB (STG094). The five active duty airmen (less than one percent of the survey) in this job, perform an average of 39 tasks. These airmen are responsible for hands-on work on the building site. These technicians differentiated themselves because they transfer the CADD and manually drafted designs and dimensions to the work area. They help to stake out building sites for the construction crews. They spend a large portion of their time (37 percent) working on the tasks of Duty A, performing surveying activities. However, they also spend 24 percent of their time on Duty C, performing CADD system activities and 17 percent of their time on Duty B, performing manual drafting activities. Representative tasks include:

- Interpret engineering sketches
- Set up or tear down surveying equipment
- Manually input field data into CADD systems
- Stake out building corners for new construction sites
- Draft preliminary designs for architectural plans in CADD systems
- Maintain drawing files
- Mark and set construction stakes

This job has a wide range of demographics considering it includes only five airmen. Three of the five members are AD; ANG and AFRC each account for one. Two of the members are E-5, while E-2, E-3, and E-4 each contributes one to the job. Three of the five perform at the 5-skill level while the other two are 3-skill level members. The AD airmen average 1.5 years TAFMS and one of the members of the job is a supervisor.

VII. MOBILITY JOB (STG107). The eight (1 percent of the sample) airmen who were identified in this job focus on the mobility and contingency tasks assigned to civil engineering personnel. Not surprisingly, many of the members (87 percent) of this job are ANG or AFRC airmen who often train war time tasks. These respondents average 38 tasks primarily associated with mobility exercises, often practicing Red Horse responsibilities. Thirty-three percent of their time is spent on Duty I, performing engineering-specific mobility or contingency activities, and another 26 percent is spent on Duty J, performing general mobility or contingency activities. Duty A, performing surveying activities, accounts for 24 percent of their time. The top differentiating tasks appear below:

- Erect tents
- Set up or tear down surveying equipment
- Perform airfield damage assessments
- Plot airfield damage assessments
- Perform crater profile measurements (CPMs)
- Identify and report suspected unexploded ordnance (UXO)
- Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles

The ANG accounts for 62 percent of the members, while the AFRC accounts for another 25 percent. Most members (75 percent) perform at the 5-skill level, with the remaining population distributed evenly between the 3- and 7-skill levels. E-6 is the most common paygrade accounting for 38 percent. E-4 and E-5 personnel each account for 25 percent of the job. TAFMS data is not applicable for this ANG and AFRC populated job. None of the members are supervisors.

VIII. RADAR EVALUATION JOB (STG224). Seven members (less than one percent of the survey), performing an average of 67 tasks, comprise this job. These personnel are self-described "Radar Site Evaluators." Their job includes work with radar and computers dissimilar to everyone else in the career field. These personnel spend 30 percent of their time on their top duty, Duty A, performing surveying activities, and another 20 percent on Duty H, performing ground radar evaluations. Some tasks that best represent this job include:

- Collect physical radar site data
- Analyze radar or radio lines of sight in relation to ground elevation

- Compute surveyed shadow and vertical angles
- Format field data for computer input
- Establish global positioning system (GPS) locations
- Compute solar data
- Establish horizontal profiles

All members of the job are AD personnel and they average 10.5 years TAFMS. Six of the seven respondents perform at the 5-skill level while the remaining person performs at the 7-skill level. Three of the seven airmen hold the E-5 paygrade while the remaining four are split evenly between E-4 and E-6. All members are at the same base in ACC and six of the seven have supervisory responsibilities.

IX. PROJECT MANAGEMENT CLUSTER (STG057). The 207 respondents forming this cluster (22 percent of the sample) were identified due to the high percentage of time spent on contract management tasks. They average 101 tasks performed. These airmen perform many of their tasks at the job site and are responsible for inspections of the building. Duty E, performing contract management or simplified acquisition of base engineering requirements (SABER) activities, accounts for 56 percent of their time. Fourteen percent of their time is spent on Duty D, performing engineering design or project planning activities. Some of the tasks that best represent this job are:

- Conduct daily on-site visits
- Inspect projects for compliance with plans and specifications
- Document construction activities
- Coordinate construction with appropriate agencies
- Interpret blueprints
- Inspect construction activities for compliance with safety regulations
- Identify contractor performance discrepancies

AD personnel account for 96 percent of the cluster, while ANG members account for the remaining 4 percent. The skill level distribution is as follows: 5-skill level (48 percent), 7-skill level (44 percent), 3-skill level (5 percent), and 9-skill level (3 percent). The predominant paygrade is E-5 comprising 32 percent of the sample, followed by E-7 with 24 percent and E-6 with 23 percent. MAJCOMs represented include PACAF and ACC each accounting for 20 percent of the cluster, AMC with 14 percent, and AFMC with 12 percent of the respondents. Thirty-nine percent of the members are supervisors.

Two jobs were identified within the cluster. The first, PROJECT PROGRAMMER JOB, showed a focus on the paperwork associated with project planning rather than the technical project completion with which the cluster is concerned. The project programmers differentiated themselves from the cluster due to tasks associated with the coordination of certain aspects of the project. It includes nine AD airmen performing an average of 72 tasks. Duty D, performing

engineering design or project planning activities, accounted for 34 percent of their time and Duty E, performing contract management or SABER activities, accounted for another 22 percent. Some of the tasks which best represent the job are listed below:

- Coordinate cost estimates with programming personnel
- Coordinate statements of work with appropriate agencies
- Coordinate programming documents with appropriate agencies
- Review programming documents

The second of the two jobs is the CONSTRUCTION INSPECTOR JOB. The 32 tasks performed by these eight AD airmen appear to focus entirely on the technical inspection of the facility site. Seventy-six percent of their time is spent on the tasks of Duty E, performing contract management or SABER activities. Top differentiating tasks are shown below:

- Inspect construction projects for compliance with plans
- Conduct contract final acceptance inspections
- Inspect construction projects for compliance with environmental/safety regulations
- Identify contractor performance discrepancies

X. SERVICE CONTRACTS CLUSTER (STG091). Two similar jobs were exposed to create this cluster of 49 AD airmen. These personnel develop or maintain the contracts that provide specific services, such as water or electricity, to facilities. Duty F, performing maintenance engineering or service contracts activities, accounts for 41 percent of the time spent by members of this cluster. Duty E, performing contract management or SABER activities, accounts for 16 percent of the time spent. Some of the tasks that best represent the job performed by these airmen are:

- Conduct service contract inspections
- Document service contract activities
- Complete surveillance or random sampling documents for service contracts
- Request contract services
- Develop performance work statements (PWSs)
- Review PWSs
- Analyze provisions of service contracts

All members are AD personnel and average 8 years TAFMS. Fifty-nine percent of the members hold the 5-skill level, while 27 percent and 14 percent hold the 3- and 5- skill levels, respectively. E-4 and E-5 personnel each account for 35 percent of the cluster, followed by E-3 members with 20 percent of the population. Twenty-nine percent of the members are in PACAF and ACC has another 24 percent. Twenty percent of the members supervise at least one person.

The two jobs, NEW CONTRACTS JOB and EXISTING CONTRACTS JOB, will be discussed together for the sake of comparison. The New Contracts Job contains 27 airmen and

the Existing Contracts Job contains the remaining 22 members of the cluster. As the names imply, members of the New Contracts Job are responsible for creating new service contracts, while members of the Existing Contracts Job are mainly concerned with maintaining existing service contracts. More tasks and a wider variety of tasks are required for personnel to write new contracts compared to maintaining existing contracts. Both jobs perform the tasks listed for the cluster, however, some of the discriminating tasks for the New Contracts Job are listed below:

- Compare government cost estimates with contractor cost estimates
- Estimate cost elements, such as materials, equipment, or labor
- Prepare final cost estimates
- Evaluate contract progress schedules

XI. SUPERVISOR CLUSTER (STG047). There are 68 respondents accounting for seven percent of the survey who grouped into this job. They average performing 76 tasks. These are typical supervisors found throughout the Air Force, spending much of their time taking care of their personnel. Duty K, performing management and supervisory activities, accounts for 39 percent of their time, followed by performing training activities (Duty L) at 16 percent and performing engineering-specific mobility or contingency activities (Duty I) also at 6 percent. Some tasks that best represent this cluster include:

- Determine or establish work assignments or priorities
- Evaluate personnel for compliance with performance standards
- Counsel subordinates concerning personal matters
- Inspect personnel for compliance with military standards
- Conduct on-the-job training
- Evaluate personnel for promotion, demotion, reclassification, or special awards
- Write or endorse military performance reports

Ninety-four percent of these personnel are active duty, with the rest being ANG members. The AD airmen average 16 years TAFMS. Their paygrades are indicative of the time they have spent in the service; E-7 personnel represent 40 percent of the job, while 28 percent are E-6 airmen and 18 percent are E-5. Skill levels coincide with the paygrade distribution; 62 percent are 7-skill level members, with 5-skill level members comprising 26 percent of the job force. The remainder of the personnel (12 percent) are 9-skill level members. Ninety-three percent of the respondents are supervising at least one person. They are fairly evenly spread throughout the MAJCOMs: PACAF comprises 18 percent, and ACC, AFSPC, and AFMC each comprising 12 percent of the cluster.

Within the cluster, three separate jobs were identified as containing personnel performing a special function. The first of these jobs is the CONTINGENCY MANAGER JOB which includes seven airmen. These respondents performed several tasks associated with a contingency, aside from their many supervisory tasks. The focus on supervisory tasks performed by these airmen is

the reason they were not grouped with the other contingency and mobility jobs within the career field. Some of the tasks that differentiated these members from the rest of the cluster are:

- Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)
- Select MOS candidates
- Identify and report suspected unexploded ordnance (UXO)
- Lay out minimum operating strip (MOS) centerlines

Another job identified within the cluster was the MOBILITY SUPERINTENDENT JOB. The five members of the job were the most experienced of the cluster in paygrade, skill levels, and TAFMS. Similar to the Mobility Job explained earlier in the report, most (three of the five) of the members of this job are ANG airmen. These members did not group together with the Mobility Job because of the supervisory and management tasks performed. Some of the tasks which separated these respondents from their peers in the cluster are:

- Don or doff chemical warfare personal protective clothing
- Inspect mobility bags or kits
- Identify equipment or personnel requirements for mobility exercises or deployments
- Perform site requirements

The third and final job of the cluster is the RESOURCES MANAGEMENT JOB. These 46 respondents were identified due to their high number of tasks performed (83) including many logistical tasks. These Resource Managers were performing management tasks that pertain to personnel, equipment, supplies, and budgets, among others. Some of their differentiating tasks include the following:

- Develop or establish work methods or procedures
- Draft budget requirements
- Conduct self-inspections or self-assessments
- Determine or establish logistics requirements, such as personnel, equipment, etc.

XII. STAFF PROGRAM MANAGER JOB (STG069). Five members of the career field form this final job. They average performing only 17 tasks, but most of the tasks are either maintenance engineering or management related. Duty F, performing maintenance engineering or service contracts activities accounts for 39 percent of their time. Other duties include Duty K, management and supervisory activities accounting for 23 percent of their time and Duty D, engineering design or project planning activities accounting for 16 percent of their time. Their top tasks include:

- Review performance work statements (PSWs)
- Analyze provisions of service contracts
- Review statements of work (SOWs)
- Evaluate quality assurance surveillance plans (QASPs) for service contracts
- Write minutes of briefings, conferences, or meetings

- Write staff studies, surveys, or routine reports, other than training or inspection reports
- Develop PWSs

These personnel are all AD; two each work for PACAF and AETC, and one works for AMC. These personnel are the most senior of the career field and average more than 20 years TAFMS. Their skill levels reflect the experience of the group, as three of the five members are 9-skill level performers and the remaining work at the 7-skill level. Three of the members hold the E-8 paygrade and two are E-7. None of the respondents are supervisors due to their staff positions.

Comparison to Previous Study

Table 5 lists the clusters and jobs identified in this report and compares them to the jobs of the 1997 OSR. The previous OSR identified seven clusters and jobs. All of the clusters and jobs from the previous study match a similar cluster or job in the current study. Four additional clusters or jobs were identified in the current study, however. The four new jobs are: Files Job, Site Developer Job, Service Contracts Cluster, and Staff Program Manager Job. The previous survey contained a generic group named the "Engineering Cluster" which contained the two technical jobs, Files and Site Developer. The Service Contracts Cluster was also a part of the previous survey's "Contract Management Cluster" with numbers not great enough to mention. Every enlisted career field has some representation at a staff level position. Five such members grouped together to form the "Staff Program Manager Job" which had no comparative job in the 1997 study. The differences between the clusters and jobs identified in the previous and current OSRs are mainly based on the more in-depth review of information with the current study.

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	CADD Cluster (ST055) (N=136)	Surveying Cluster (ST099) (N=333)	Entry-Lvl CADD Job (ST072) (N=6)	Files Job (ST090) (N=7)	Surveying Assistant Job (ST077) (N=21)	Site Developer Job (ST094) (N=5)
A PERFORMING SURVEYING ACTIVITIES	17	25	14	10	58	37
B PREPARING MANUAL DRAFTING ACTIVITIES	13	9	10	31	10	17
C PERFORMING CADD SYSTEMS ACTIVITIES	45	16	66	25	15	24
D PERFORMING ENGINEERING DESIGN OR PROJECT MANAGEMENT ACTIVITIES	3	4	0	5	1	3
E PERFORMING CONTRACT MANAGEMENT OR SABER ACTIVITIES	2	3	2	2	2	2
F PERFORMING MAINTENANCE ENGINEERING OR SERVICE CONTRACTS ACTIVITIES	*	*	0	0	*	*
G PERFORMING MATERIAL TESTING	*	1	0	0	0	2
H PERFORMING GROUND RADAR EVALUATIONS	*	*	0	0	*	0
I PERFORMING ENGINEERING-SPECIFIC MOBILITY OR CONTINGENCY ACTIVITIES	7	12	4	2	3	4
J PERFORMING GENERAL MOBILITY OR CONTINGENCY ACTIVITIES	5	11	1	5	3	6
K PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2	9	2	7	2	2
L PERFORMING TRAINING ACTIVITIES	2	5	0	2	2	2
M PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	*	1	0	0	*	*
N PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	3	1	11	3	*

* less than 1 percent performing

TABLE 3 (CONTINUED)

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	Mobility Job (ST107) (N=8)	Radar Evaluator Job (ST224) (N=7)	Project Manage Cluster (ST057) (N=207)	Service Contracts Cluster (ST091) (N=49)	Supervise Cluster (ST047) (N=68)	Staff Prog Manager Job (ST069) (N=5)
A PERFORMING SURVEYING ACTIVITIES	24	30	2	2	3	0
B PREPARING MANUAL DRAFTING ACTIVITIES	6	*	2	2	2	2
C PERFORMING CADD SYSTEMS ACTIVITIES	3	3	3	4	4	0
D PERFORMING ENGINEERING DESIGN OR PROJECT MANAGEMENT ACTIVITIES	*	*	14	9	5	16
E PERFORMING CONTRACT MANAGEMENT OR SABER ACTIVITIES	*	2	56	16	6	1
F PERFORMING MAINTENANCE ENGINEERING OR SERVICE CONTRACTS ACTIVITIES	0	0	*	41	5	39
G PERFORMING MATERIAL TESTING	*	*	*	0	*	0
H PERFORMING GROUND RADAR EVALUATIONS	0	20	0	0	*	0
I PERFORMING ENGINEERING-SPECIFIC MOBILITY OR CONTINGENCY ACTIVITIES	32	0	5	8	6	3
J PERFORMING GENERAL MOBILITY OR CONTINGENCY ACTIVITIES	26	0	4	5	5	2
K PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1	16	8	7	39	23
L PERFORMING TRAINING ACTIVITIES	5	14	3	3	16	1
M PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	*	8	1	1	4	13
N PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	6	1	2	4	0

* less than 1 percent performing

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	CADD Cluster (ST055) (N=136)	Surveying Cluster (ST099) (N=333)	Entry-Lvl CADD Job (ST072) (N=6)	Files Job (ST090) (N=7)	Surveying Assistant Job (ST077) (N=21)	Site Developer Job (ST094) (N=5)
PERCENT OF SAMPLE	14	36	*	*	2	*
PERCENT IN CONUS	80	88	67	86	86	0
DAFSC DISTRIBUTION:						
3E531	56	16	50	57	33	40
3E551	38	47	50	43	67	60
3E571	6	33	0	0	0	0
3E591	0	4	0	0	0	0
COMPONENT STATUS:						
ACTIVE DUTY TOTAL	88	51	100	100	61	60
ACC	26	16	17	29	14	20
PACAF	11	8	33	13	0	0
AMC	13	8	0	0	14	0
AFMC	11	7	33	29	19	20
AETC	7	5	17	0	5	0
OTHER AD COMMANDS/AGENCIES**	20	7	0	29	9	20
AIR NATIONAL GUARD/AIR FORCE RESERVE COMMAND	12	49	0	0	39	40
PAYGRADE DISTRIBUTION:						
E-1 - E-3	56	17	67	57	43	40
E-4	22	13	33	43	33	20
E-5	15	27	0	0	24	40
E-6	4	20	0	0	0	0
E-7	3	18	0	0	0	0
E-8	0	5	0	0	0	0
AVERAGE MONTHS TAFMS ***	50	101	29	24	37	18
PERCENT IN FIRST ENLISTMENT (1-48 MOS TAFMS) ***	77	49	83	86	85	100
PERCENT SUPERVISING	11	51	17	14	5	20
AVERAGE NUMBER OF TASKS PERFORMED	44	112	9	15	31	39

**Less than one* ***Other includes: AFSPC, USAFE, 11th Wing, AFSOC, and many various agencies* ****Active Duty Only*

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	Mobility Job (ST107) (N=8)	Radar Evaluator Job (ST224) (N=7)	Project Manage Cluster (ST057) (N=207)	Service Contracts Cluster (ST091) (N=49)	Supervise Cluster (ST047) (N=68)	Staff Prog Manager Job (ST069) (N=5)
PERCENT OF SAMPLE	1	*	22	5	7	*
PERCENT IN CONUS	100	100	69	65	74	60
DAFSC DISTRIBUTION:						
3E531	13	0	5	27	0	0
3E551	75	86	48	59	26	0
3E571	12	14	44	14	62	40
3E591	0	0	3	0	12	60
COMPONENT STATUS:						
ACTIVE DUTY TOTAL	13	100	96	100	88	100
ACC	0	100	20	24	12	0
PACAF	0	0	20	29	18	40
AMC	0	0	14	16	10	20
AFMC	13	0	12	6	12	0
AETC	0	0	10	2	9	40
OTHER AD COMMANDS/AGENCIES**	0	0	20	23	27	0
AIR NATIONAL GUARD/AIR FORCE RESERVE COMMAND	87	0	4	0	12	0
PAYGRADE DISTRIBUTION:						
E-1 - E-3	12	0	3	20	0	0
E-4	25	29	13	35	1	0
E-5	25	42	32	35	18	0
E-6	38	29	23	6	28	0
E-7	0	0	24	2	40	40
E-8	0	0	5	2	13	60
AVERAGE MONTHS TAFMS ***	20	137	164	98	192	241
PERCENT IN FIRST ENLISTMENT (1-48 MOS TAFMS) ***	100	0	18	34	9	0
PERCENT SUPERVISING	0	86	39	20	93	0
AVERAGE NUMBER OF TASKS PERFORMED	38	67	101	32	76	17

**Less than one* ****Other includes: AFSPC, USAFE, 11th Wing, AFSOC, and many various agencies* ******Active Duty Only*

TABLE 5

SPECIALTY JOB COMPARISON BETWEEN CURRENT AND 1997 SURVEYS

CURRENT SURVEY (N=947)	1997 SURVEY (N=1022)
I. CADD Cluster	Engineering Cluster
II. Surveying Cluster	Engineering Cluster
III. Entry-Level CADD Job	Entry-Level CADD Draftsman Job
IV. Files Job	*No Similar Job Identified*
V. Surveying Assistant Job	Entry-Level Draftsman / Surveyor Job
VI. Site Developer Job	*No Similar Job Identified*
VII. Mobility Job	Mobility Cluster
VIII. Radar Evaluation Job	Ground Radar Evaluator Job
IX. Project Management Cluster	Contract Management Cluster
X. Service Contracts Cluster	*No Similar Job Identified*
XI. Supervisor Cluster	Supervisor Cluster
XII. Staff Program Manager Job	*No Similar Job Identified*

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108 *Airman Classification,* Specialty Description and the Career Field Education and Training Plan (CFETP), reflect what career ladder personnel are actually doing in the field.

A variety of tables are included in this section to help explain the progression. Note that there are no 3-skill level members from the ANG or AFRC. All 3-skill level members will be discussed in the active duty analysis section, though their numbers are also available for the overall comparison of skill level progression found in Tables 6 and 7.

A generally typical pattern of progression is noted within the AFSC 3E5X1 career ladder. Airmen enter the career field performing technical tasks associated with the career field in the CADD and Surveying Clusters. As personnel gain experience and rise through the skill levels, they are given more responsibilities and have a more supervisory and managerial role. A concerning 36 percent of 9-skill level members belong to the Surveying Cluster, though most are ANG or AFRC personnel.

Skill-Level Descriptions

Skill-level data must be analyzed from many angles to accurately show the progression through the career ladder. Within the study, AD, ANG, and AFRC personnel are represented at 5-, 7-, and 9-skill levels. Many tables have been included to present the skill-level data. To make the next sections easier to understand, the tables are presented in an orderly way. There is an analysis of all personnel (AD, ANG, and AFRC) in the sample sorted by skill-level, followed by a skill-level analysis of only AD airmen. The ANG and AFRC analyses are next, followed by analyses of differences between the components.

All Components: Analysis of the DAFSC groups among the combined AD, ANG, and AFRC personnel shows a fairly typical progression through the career ladder, with one notable exception. Table 6 shows the distribution of DAFSC members through the clusters and jobs of the career field, while Table 7 shows the distribution of time spent on duties by DAFSC airmen. Table 6 shows that 36 percent of 9-skill level members continue to perform in the Surveying Cluster, a typically technical area of the career field. Though most of those 9-skill level members work in the Surveying NCOIC Job within the cluster, such experienced personnel are typically further removed from the technical aspect of the career field. A look at the time spent on duties shows a typical progression towards management and supervisory activities along with the relatively lower focus on the technical duties of A through C.

The top tasks performed by the DAFSC groups are presented in Tables 8 - 10. Tables 11 and 12 show the tasks that best differentiate successive skill levels. The 442 5-skill level

members (47 percent of the sample) of the career field perform heavily in the mobility and contingency-related duty titles. Such a focus on the mobility-related duty titles reflects the influence of the ANG and AFRC airmen, RED HORSE training, and current contingencies. Thirty-five percent of the members are in the Surveying Cluster and another 22 percent are in the Project Management Cluster.

Twenty-nine percent of the survey (278 airmen) perform at the 7-skill level. While the largest group of these airmen (40 percent) were still identified in the Surveying Cluster, many of the remaining personnel have progressed to the Project Management and Supervisor Clusters. Their time spent has also begun to shift towards management and supervision from technical tasks. The top tasks are supervisory or senior-level technician in nature. Many of these members appear in the Surveying Cluster as part of the Surveying NCOIC Job. Table 11 shows that the 7-skill level members perform every task 5-skill level airmen perform as well as having a greater focus on supervisory tasks.

Thirty-three 9-skill level members appear in the survey sample and account for 4 percent of the sample. As reported previously, there are still a number of these highly experienced members in the technical Surveying Cluster. However, the group also contains a number of supervisors and three of the five staff program managers. Their top tasks include a large percentage of management and supervisory tasks. Table 12 shows the greater management focus than 7-skill level airmen.

Active Duty: AD members comprise the majority of the survey, so the analysis is similar to the all-component analysis. The AD analysis shows a more typical progression, however, than the all-component analysis as AD 9-skill level members are nearly completely removed from the basic technical tasks and clusters of the career field. Table 13 shows the distribution of AD DAFSC members through the clusters and jobs of the career field, while Table 14 shows the distribution of time spent on duties by AD DAFSC airmen.

The top tasks performed by the DAFSC groups are presented in Tables 15 through 18. Tables 19 through 21 show the tasks that best differentiate successive skill levels. The 3-skill level members are performing primarily technical tasks taught at technical school including CADD and surveying duties. Most of the 193 members were identified in the CADD or Surveying Clusters, with only small percentages of 3-skill level airmen varying from the most technical of jobs. They are compared to the 319 AD 5-skill level airmen Table 19. The table shows the entry-level technical tasks accomplished more by 3-skill level members while 5-skill level airmen gain the responsibilities of training and inspection tasks. Table 13 shows the great increase in the percentage of people entering the Project Management Cluster and leaving the CADD Cluster which indicates a clear progression from the 3- to 5-skill level. A similar finding comes from Table 14 which indicates 5-skill level airmen begin spending less time on the technical Duties A through C and more time on the contract management tasks of Duty E.

Table 20 shows the differences between the AD DAFSC 3E551 members and their AD supervisors, the 7-skill level members. The table shows the evident NCOIC positions held by 7-skill level members as they mirror all technical tasks performed by 5-skill level airmen in

addition to performing many supervisory tasks. There are 190 AD members in the survey; 45 percent were identified in the Project Management Cluster. Many personnel also grouped into the Surveying and Supervisor Clusters.

The survey sample included 14, 9-skill level respondents. These members grouped primarily into the Supervisor and Project Manager Clusters and the Staff Program Managers Job. As 9-skill level members, these respondents have progressed through many of the supervisory jobs within the career field and have more managerial responsibilities. Table 21 shows some of the tasks differentiating these members from their 7-skill level counterparts.

Air National Guard: ANG members comprised 16 percent of the survey sample and included 154 respondents. These airmen show a progression through the skill levels similar to that found in the analysis of their AD peers with only minor exceptions. Tables 22 - 28 are dedicated to the ANG personnel. Table 22 displays the distribution of DAFSC members throughout the clusters and jobs. Table 23 presents the distribution of time spent by DAFSC groups. Each of these tables gives support for the progression of airmen through the career ladder from technician to supervisor and manager. However, most of the ANG personnel work in the Surveying Cluster. Tables 24 - 26 present the top tasks performed by each skill level and Tables 27 and 28 display the tasks which differentiate personnel of each skill level.

Table 24 lists the top tasks performed by ANG DAFSC 3E551 respondents. With 83 respondents, this group accounts for 54 percent of the ANG sample and 9 percent of the total survey sample. The top tasks focus on surveying and also include various contingency tasks. The technical nature of the jobs performed by these airmen is evident from the tables. Table 23 shows that more than half (58 percent) of their time is spent on tasks of the technical duties A through C.

Table 25 presents the top 7-skill level tasks. The average number of tasks performed is 124 compared to only 74 by 5-skill level members. Table 27 shows that the 7-skill level members are acting as NCOICs or supervisors to the 5-skill level members. These 56 7-skill level airmen are performing every task that 5-skill level airmen perform as well as their supervisory and training tasks. While 80 percent of the 7-skill level respondents were identified as members of the Surveying Cluster, they group together primarily as members of the Surveying NCOIC Job within the cluster.

Table 28 shows the main task differences between the 7-skill level NCOICs and their 9-skill level counterparts. While 7-skill level airmen are expected to perform technical tasks at some level, due to their NCOIC status, the 14, 9-skill level members are further removed from the technical aspect of the career field. Nine-skill level members are the supervisors and project managers within the career field as seen in Table 22.

One additional survey respondent held the DAFSC 3E500, designating a Chief Enlisted Manager. Due to the single response representing the skill level, no analyses were accomplished to include the member.

Air Force Reserve Command: The AFRC sample contains 87 members representing 9 percent of the total survey sample. The progression through the career ladder that was evident within the analyses of the other components is not as evident for AFRC personnel. Tables 29 through 35 present the AFRC information. Table 29 shows that personnel progress into the Surveying Cluster as they gain experience, though the only AFRC supervisors appear at the 7-skill level. Table 30 shows that personnel progress out of the surveying jobs and into management or supervisory jobs. The table shows almost no difference between time spent on duties by 7- and 9-skill level members. The findings suggest that 7- and 9-skill level members are performing in the Surveying NCOIC Job within the Surveying Cluster, while 5-skill level airmen are performing the technical Surveying Job with the cluster.

Forty airmen represent the AFRC at the 5-skill level. The bulk of their time is spent on the technical tasks of duties A through C. Table 31 shows the top tasks performed by these airmen are mainly surveying or contingency and mobilization tasks. These airmen appear as typical 5-skill level airmen and can be described as experienced technicians or journeymen.

The study contains 32 AFRC 7-skill level members. Their top tasks are listed in Table 32. Most members are in the Surveying Cluster performing as NCOICs of the surveyors. Only a portion of their time is spent on surveying tasks, however, with more time spent on supervisory and contingency tasks. The main task differences between the 5- and 7-skill level airmen are noted in Table 34. The differences are expected as 5-skill level members are expected to perform the more technical CADD and surveying duties while 7-skill level members are given greater opportunities to train and supervise.

The remaining five AFRC respondents are 9-skill level airmen. Their top tasks, listed in Table 33, show an emphasis on managerial, supervisory, and contingency tasks. While all five respondents are part of the Surveying Cluster, they are the most experienced members of the NCOIC job within the cluster. A look at the time spent on duties in Table 30 shows that these respondents nearly mirror the performance of 7-skill level members. Table 35, however, shows the task differences between the two skill levels. Nine-skill level airmen perform nearly all the tasks that 7-skill level members perform, as well as several more managerial tasks. These 9-skill level airmen perform an average of over 70 tasks more than their 7-skill level counterparts, contributing evidence that these incumbents are the supervisors of 7-skill level members.

Component Comparisons: Within similar skill levels, the main task differences between components are highlighted in Tables 36 - 44. AD members are first compared to ANG members in Tables 36 through 38. AD tasks are compared to AFRC tasks in Tables 39 - 41, and Tables 42 - 44 are dedicated to the task differences between ANG and AFRC members.

The ANG does not have any 3-skill level representatives in the sample. Due to the lack of 3-skill level airmen, 5-skill level airmen are required to do the entry-level technical tasks within the ANG. This explanation highlights the major difference between the AD and ANG at the 5-skill level shown in Table 36. AD 5-skill level members have progressed through the entry-level tasks are gaining responsibility for contract management duties, while the technical surveying tasks are accomplished more often by their peers in the ANG.

Table 37 shows that AD 7-skill level members have taken a decisively stronger supervisory role than their ANG counterparts. The ANG members are accomplishing the many technical tasks associated with surveying and drafting. Part of this may be due to the strong emphasis the ANG members have on mobility and contingency preparedness.

Table 38 highlights the differences between the 9-skill level members of each component. The AD members focus on a more senior level project management, while the ANG members are still relatively technical. Again, the ANG focus on mobility is probably the reason for the differences.

Table 39 begins the AD versus AFRC analyses. The table is similar to Table 36 highlighting the task differences between AD and ANG members. AFRC 5-skill level members are the junior members of the component and are obligated the technical surveying tasks. Most AD members have progressed through the entry-level surveying tasks and have begun work on contract management.

Table 40 shows the AD focus on contract management at the 7-skill level, while AFRC members are performing surveying and contingency tasks. AFRC members, like the ANG, are constantly training for the next contingency operation. AD members spend more time on every day contract management work than contingency work.

Table 41 displays the tasks which best differentiate the components at the 9-skill level. The fact that all five AFRC members in this group were identified in the Surveying Cluster is a testament to the technical tasks they perform, especially surveying-related technical tasks. AD 9-skill level members have generally left the technical aspect of the career field for senior level project management and contract management, as shown by the top differentiating tasks. The differences can again be explained by the AFRC focus on contingencies.

Table 42 shows the 5-skill level comparison of ANG and AFRC respondents. The differences between the two components at the 5-skill level are minor. The ANG members show a slight tendency towards the technical surveying and drafting duties, though AFRC personnel are also accomplishing the tasks. The AFRC members have a slight tendency to perform more contingency and mobility tasks. The differences are very small and do not reflect a major difference between the components.

Table 43 shows the top tasks which differentiate the ANG and AFRC 7-skill level members. Note that both groups are performing the top differentiating tasks though the differences in percent members performing are quite great. ANG airmen work more of the technical tasks of the career field, while the AFRC representatives perform more of the supervisory tasks. This table helps to show that there is a more clear progression through the career ladder for AFRC personnel than for the ANG.

Table 44 displays the tasks that differentiate the components at the 9-skill level. No clear patterns emerge from the table. AFRC members appear to be more technically oriented in their

contingency tasks, while ANG airmen appear to take a more managerial role. Tables 25 and 29, the components respective specialty job distribution helps to confirm the findings of Table 44. Table 25 shows ANG members spread throughout the jobs within the career field, typically as the senior personnel in each job. Table 29 shows that AFRC members are restricted to the technical Surveying Cluster as the senior personnel in the cluster. NCOIC jobs, as the AFRC members appear to hold, are more technically oriented than the managerial jobs some ANG members have found.

Summary

Progression appears to follow a typical pattern. Personnel from the 3-skill level begin their career working with CADD or surveying. Their jobs require them to perform strictly technical tasks. At the 5-skill level personnel are required to perform more advanced technical tasks and are often given service contract and project management jobs. Seven-skill level members work more heavily in a supervisory role and perform technically in the role of NCOIC or inspector. Nine-skill level members perform staff duties and still perform many supervisor functions.

The main difference between the AFSC 3E5X1 AD force and personnel in ANG and AFRC is the ANG and AFRC technical orientation. The ANG and AFRC members follow similar career ladder ascension as the active duty among their 5- and 9-skill level airmen, however, they keep a technical focus even into the 9-skill level.

TABLE 6

DISTRIBUTION OF ALL COMPONENT DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT RESPONDING)

SPECIALTY JOBS	ACTIVE 3E531 (N=193)	ALL 3E551 (N=442)	ALL 3E571 (N=278)	ALL 3E591 (N=33)
I. CADD Cluster	39	12	3	0
II. Surveying Cluster	28	35	40	36
III. Entry-Level CADD Job	2	1	0	0
IV. Files Job	2	1	0	0
V. Surveying Assistant Job	4	3	0	0
VI. Site Developer Job	1	1	0	0
VII. Mobility Job	1	1	*	0
VIII. Radar Evaluation Job	0	1	*	0
IX. Project Management Cluster	6	22	33	18
X. Service Contracts Cluster	7	7	3	0
XI. Supervisor Cluster	0	4	15	24
XII. Staff Program Managers Job	0	0	*	9
Not Grouped	10	12	4	13

* Less than one percent

TABLE 7

RELATIVE PERCENT TIME SPENT ON DUTIES BY ALL COMPONENT DAFSC GROUPS

DUTIES		ACTIVE 3E531 (N=193)	ALL 3E551 (N=319)	ALL 3E571 (N=190)	ALL 3E591 (N=14)
A	PERFORMING SURVEYING ACTIVITIES	21	18	10	8
B	PERFORMING MANUAL DRAFTING ACTIVITIES	11	7	4	4
C	PERFORMING CADD SYSTEMS ACTIVITIES	31	15	8	4
D	PERFORMING ENGINEERING DESIGN OR PROJECT PLANNING ACTIVITIES	3	6	9	9
E	PERFORMING CONTRACT MANAGEMENT OR SABER ACTIVITIES	8	17	19	12
F	PERFORMING MAINTENANCE ENGINEERING OR SERVICE CONTRACTS ACTIVITIES	5	4	2	5
G	PERFORMING MATERIAL TESTING	*	1	1	0
H	PERFORMING GROUND RADAR EVALUATIONS	*	1	1	0
I	PERFORMING ENGINEERING-SPECIFIC MOBILITY OR CONTINGENCY ACTIVITIES	8	9	8	8
J	PERFORMING GENERAL MOBILITY AND CONTINGENCY ACTIVITIES	6	7	7	9
K	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2	7	18	26
L	PERFORMING TRAINING ACTIVITIES	1	4	7	8
M	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	*	1	3	4
N	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	3	3	3

* Less than one percent

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY ALL 3E551 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=442)
B0073	Reproduce drawings	64
I0302	Plot airfield damage assessments	61
I0304	Select MOS candidates	59
C0090	Maintain computer drawing files	58
A0042	Set up or tear down surveying equipment	58
J0324	Don or doff chemical warfare personal protective clothing	57
I0299	Perform airfield damage assessments	56
J0327	Erect tents	56
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	55
A0027	Measure horizontal distances	54
B0049	Interpret engineering sketches	52
E0164	Interpret blueprints	51
A0040	Record field notes	51
C0074	Complete architectural plans in CADD systems	49
A0026	Measure horizontal angles	49
B0050	Maintain drawing files, other than computer drawing files	48
C0082	Develop modifications from existing drawings in CADD systems	48
A0024	Manually input field data into CADD system	48
C0101	Update as-built drawings in CADD systems	46
C0083	Develop site plans in CADD systems	44
C0075	Complete civil plans in CADD systems	44
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	41
A0018	Develop maps or plans with surveying or architectural software	40
C0102	Update record drawings in CADD systems	38
L0418	Conduct on-the-job training (OJT)	38

* Average Number of Tasks Performed - 72

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY ALL 3E571 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=278)
L0418	Conduct on-the-job training (OJT)	66
K0398	Inspect personnel for compliance with military standards	66
K0376	Determine or establish work assignments or priorities	64
E0164	Interpret blueprints	63
I0304	Select MOS candidates	63
K0374	Counsel subordinates concerning personal matters	63
J0324	Don or doff chemical warfare personal protective clothing	63
B0049	Interpret engineering sketches	62
B0073	Reproduce drawings	62
I0302	Plot airfield damage assessments	62
K0412	Write recommendations for awards or decorations	59
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	58
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	56
L0419	Counsel trainees on training progress	56
K0392	Evaluate personnel for compliance with performance standards	56
K0371	Conduct supervisory performance feedback sessions	56
L0420	Determine training requirements	54
K0411	Write or endorse military performance reports	54
K0399	Interpret policies, directives, or procedures for subordinates	54
L0430	Maintain training records or files	51
C0090	Maintain computer drawing files	50
D0114	Estimate cost elements, such as materials, equipment, or labor	50

* Average Number of Tasks Performed - 109

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY ALL 3E591 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=33)
K0398	Inspect personnel for compliance with military standards	82
K0374	Counsel subordinates concerning personal matters	79
K0366	Assign personnel to work areas or duty positions	76
L0419	Counsel trainees on training progress	76
L0415	Brief personnel concerning training programs or matters	73
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	73
K0376	Determine or establish work assignments or priorities	73
K0412	Write recommendations for awards or decorations	73
L0418	Conduct on-the-job training (OJT)	70
K0382	Develop or establish work schedules	70
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	70
K0399	Interpret policies, directives, or procedures for subordinates	70
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	70
J0324	Don or doff chemical warfare personal protective clothing	67
E0164	Interpret blueprints	67
K0375	Determine or establish logistics requirements, such as personnel, equipment, tools, supplies, or workspace	67
K0381	Develop or establish work methods or procedures	64
D0114	Estimate cost elements, such as materials, equipment, or labor	64
M0444	Maintain administrative files	58
D0134	Review SOWs	45
E0143	Conduct daily on-site visits	39

* Average Number of Tasks Performed - 123

TABLE 11

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ALL DAFSCs 3E551 AND 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ALL 3E551 (N=442)	ALL 3E571 (N=278)	DIFFERENCE
	No tasks identified as predominantly performed by 5-skill level members			
K0398	Inspect personnel for compliance with military standards	23	66	-43
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	15	58	-43
K0412	Write recommendations for awards or decorations	16	59	-43
K0374	Counsel subordinates concerning personal matters	23	63	-40
K0376	Determine or establish work assignments or priorities	24	64	-39
K0371	Conduct supervisory performance feedback sessions	18	56	-38
K0375	Determine or establish logistics requirements, such as personnel, equipment, tools, supplies, or workspace	14	53	-38
K0382	Develop or establish work schedules	14	51	-37
K0366	Assign personnel to work areas or duty positions	12	50	-37
K0411	Write or endorse military performance reports	16	54	-37

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ALL DAFSCs 3E571 AND 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ALL 3E571 (N=278)	ALL 3E591 (N=33)	DIFFERENCE
N0465	Prepare requisitions for local purchase of equipment, tools, or supplies	26	9	17
C0094	Produce charts in CADD systems	32	15	17
C0082	Develop modifications from existing drawings in CADD systems	43	27	16
C0085	Draft preliminary designs for architectural plans in CADD systems	34	18	16
A0032	Perform as-built surveys	44	30	14
C0102	Update record drawings in CADD systems	36	24	12
K0397	Initiate actions required due to substandard performance of personnel	37	67	-30
K0396	Initiate personnel action requests	30	61	-30
K0366	Assign personnel to work areas or duty positions	50	76	-26
L0415	Brief personnel concerning training programs or matters	49	73	-24
K0370	Conduct staff assistance visits, inspections, or audits	17	39	-23
M0444	Maintain administrative files	35	58	-23
K0367	Assign sponsors for newly assigned personnel	40	64	-23

TABLE 13

DISTRIBUTION OF AD DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT RESPONDING)

SPECIALTY JOBS	ACTIVE 3E531 (N=193)	ACTIVE 3E551 (N=319)	ACTIVE 3E571 (N=190)	ACTIVE 3E591 (N=14)
I. CADD Cluster	39	12	3	0
II. Surveying Cluster	28	24	20	7
III. Entry-Level CADD Job	2	1	0	0
IV. Files Job	2	1	0	0
V. Surveying Assistant Job	4	2	0	0
VI. Site Developer Job	1	0	0	0
VII. Mobility Job	1	0	0	0
VIII. Radar Evaluation Job	0	2	1	0
IX. Project Management Cluster	6	31	45	21
X. Service Contracts Cluster	7	9	4	0
XI. Supervisor Cluster	0	6	19	43
XII. Staff Program Managers Job	0	0	1	21
Not Grouped	10	12	7	8

TABLE 14

RELATIVE PERCENT TIME SPENT ON DUTIES BY AD DAFSC GROUPS

DUTIES		ACTIVE 3E531 (N=193)	ACTIVE 3E551 (N=319)	ACTIVE 3E571 (N=190)	ACTIVE 3E591 (N=14)
A	PERFORMING SURVEYING ACTIVITIES	21	14	6	2
B	PERFORMING MANUAL DRAFTING ACTIVITIES	11	5	3	2
C	PERFORMING CADD SYSTEMS ACTIVITIES	31	15	8	3
D	PERFORMING ENGINEERING DESIGN OR PROJECT PLANNING ACTIVITIES	3	7	11	14
E	PERFORMING CONTRACT MANAGEMENT OR SABER ACTIVITIES	8	23	25	18
F	PERFORMING MAINTENANCE ENGINEERING OR SERVICE CONTRACTS ACTIVITIES	5	5	3	12
G	PERFORMING MATERIAL TESTING	*	1	1	0
H	PERFORMING GROUND RADAR EVALUATIONS	*	1	1	0
I	PERFORMING ENGINEERING-SPECIFIC MOBILITY OR CONTINGENCY ACTIVITIES	8	7	5	3
J	PERFORMING GENERAL MOBILITY AND CONTINGENCY ACTIVITIES	6	5	5	4
K	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2	8	20	30
L	PERFORMING TRAINING ACTIVITIES	1	5	6	5
M	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	*	1	3	5
N	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	3	3	2

TABLE 15

REPRESENTATIVE TASKS PERFORMED BY AD 3E531 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=193)
B0073	Reproduce drawings	77
C0090	Maintain computer drawing files	77
C0101	Update as-built drawings in CADD systems	72
A0042	Set up or tear down surveying equipment	69
C0102	Update record drawings in CADD systems	64
C0074	Complete architectural plans in CADD systems	63
B0050	Maintain drawing files, other than computer drawing files	62
C0082	Develop modifications from existing drawings in CADD systems	58
A0003	Communicate using standardized surveying hand signals	58
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	56
A0027	Measure horizontal distances	54
C0076	Complete electrical plans in CADD systems	53
I0302	Plot airfield damage assessments	53
C0078	Complete structural plans in CADD systems	52
C0099	Scan drawings into CADD systems	52
B0049	Interpret engineering sketches	52
A0024	Manually input field data into CADD system	52
C0083	Develop site plans in CADD systems	51
A0018	Develop maps or plans with surveying or architectural software	51
C0077	Complete mechanical plans in CADD systems	50
C0075	Complete civil plans in CADD systems	50
I0299	Perform airfield damage assessments	49
C0091	Measure irregular lines in CADD systems, such as broken lines or curves	46
C0085	Draft preliminary designs for architectural plans in CADD systems	44

* Average Number of Tasks Performed - 51

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY AD 3E551 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=319)
B0073	Reproduce drawings	61
I0302	Plot airfield damage assessments	57
C0090	Maintain computer drawing files	56
J0324	Don or doff chemical warfare personal protective clothing	54
E0164	Interpret blueprints	52
A0042	Set up or tear down surveying equipment	49
C0082	Develop modifications from existing drawings in CADD systems	47
B0049	Interpret engineering sketches	47
C0074	Complete architectural plans in CADD systems	46
C0101	Update as-built drawings in CADD systems	43
L0418	Conduct on-the-job training (OJT)	41
B0050	Maintain drawing files, other than computer drawing files	40
E0165	Maintain records of contract changes	40
C0075	Complete civil plans in CADD systems	40
E0159	Identify contractor performance discrepancies	39
C0083	Develop site plans in CADD systems	39
E0143	Conduct daily on-site visits	38
C0076	Complete electrical plans in CADD systems	37
C0102	Update record drawings in CADD systems	36
E0163	Inspect construction projects for compliance with plans and specifications	34
E0152	Document construction activities	32
F0202	Conduct service contract inspections	20
F0204	Document service contract activities	18
F0201	Complete surveillance or random sampling documents for service contracts	17

* Average Number of Tasks Performed - 72

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY AD 3E571 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=190)
K0398	Inspect personnel for compliance with military standards	67
K0412	Write recommendations for awards or decorations	66
K0374	Counsel subordinates concerning personal matters	66
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	64
K0376	Determine or establish work assignments or priorities	63
K0411	Write or endorse military performance reports	62
K0371	Conduct supervisory performance feedback sessions	62
E0164	Interpret blueprints	61
L0418	Conduct on-the-job training (OJT)	61
K0392	Evaluate personnel for compliance with performance standards	60
K0399	Interpret policies, directives, or procedures for subordinates	59
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	56
K0387	Establish performance standards for subordinates	55
L0420	Determine training requirements	53
D0108	Coordinate statements of work (SOWs) with appropriate agencies	51
D0134	Review SOWs	51
D0114	Estimate cost elements, such as materials, equipment, or labor	50
E0144	Coordinate construction with appropriate agencies	49
E0163	Inspect construction projects for compliance with plans and specifications	47
D0124	Prepare SOWs	47
E0143	Conduct daily on-site visits	46

* Average Number of Tasks Performed - 106

TABLE 18

REPRESENTATIVE TASKS PERFORMED BY AD 3E591 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=14)
D0134	Review SOWs	86
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	86
D0108	Coordinate statements of work (SOWs) with appropriate agencies	71
K0411	Write or endorse military performance reports	71
K0412	Write recommendations for awards or decorations	71
K0398	Inspect personnel for compliance with military standards	71
K0387	Establish performance standards for subordinates	71
K0374	Counsel subordinates concerning personal matters	71
K0371	Conduct supervisory performance feedback sessions	71
K0406	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	71
K0403	Review budget requirements	64
K0383	Draft budget requirements	64
D0124	Prepare SOWs	64
M0444	Maintain administrative files	64
K0392	Evaluate personnel for compliance with performance standards	64
K0399	Interpret policies, directives, or procedures for subordinates	64
F0200	Analyze provisions of service contracts	50
F0209	Review PWSs	50
F0206	Evaluate quality assurance surveillance plans (QASPs) for service contracts	50
M0449	Write minutes of briefings, conferences, or meetings	50
K0405	Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	50

* Average Number of Tasks Performed - 104

TABLE 19

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD DAFSCs 3E531 AND 3E551 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E531 (N=193)	ACTIVE 3E551 (N=319)	DIFFERENCE
C0101	Update as-built drawings in CADD systems	72	43	29
C0102	Update record drawings in CADD systems	64	36	28
C0099	Scan drawings into CADD systems	52	27	25
B0050	Maintain drawing files, other than computer drawing files	62	40	22
A0042	Set up or tear down surveying equipment	69	49	21
C0090	Maintain computer drawing files	77	56	21
A0003	Communicate using standardized surveying hand signals	58	38	19
E0165	Maintain records of contract changes	12	40	-29
L0418	Conduct on-the-job training (OJT)	13	41	-28
K0374	Counsel subordinates concerning personal matters	2	30	-28
D0134	Review SOWs	6	33	-27
E0159	Identify contractor performance discrepancies	11	39	-27
L0419	Counsel trainees on training progress	4	30	-26
E0161	Inspect construction activities for compliance with safety regulations or procedures	7	33	-26

TABLE 20

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD DAFSCs 3E551 AND 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E551 (N=319)	ACTIVE 3E571 (N=190)	DIFFERENCE
	No tasks identified as predominantly performed by 5-skill level members			
K0412	Write recommendations for awards or decorations	19	66	-47
K0406	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	12	56	-44
K0398	Inspect personnel for compliance with military standards	27	67	-41
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	23	64	-41
K0411	Write or endorse military performance reports	20	62	-41
K0371	Conduct supervisory performance feedback sessions	23	62	-39
K0375	Determine or establish logistics requirements, such as personnel, equipment, tools, supplies, or workspace	16	55	-38

TABLE 21

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD DAFSCs 3E571 AND 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E571 (N=190)	ACTIVE 3E591 (N=14)	DIFFERENCE
N0465	Prepare requisitions for local purchase of equipment, tools, or supplies	31	*	31
C0083	Develop site plans in CADD systems	37	7	30
A0024	Manually input field data into CADD system	36	7	29
N0450	Coordinate maintenance of equipment with appropriate agencies	28	*	28
C0101	Update as-built drawings in CADD systems	34	7	27
C0102	Update record drawings in CADD systems	33	7	25
C0082	Develop modifications from existing drawings in CADD systems	39	14	25
D0134	Review SOWs	51	86	-35
K0396	Initiate personnel action requests	31	64	-34
F0206	Evaluate quality assurance surveillance plans (QASPs) for service contracts	17	50	-33
K0397	Initiate actions required due to substandard performance of personnel	41	71	-31
F0209	Review PWSs	19	50	-31
F0200	Analyze provisions of service contracts	21	50	-29

* No Members Performed the Task

TABLE 22

DISTRIBUTION OF ANG DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT RESPONDING)

SPECIALTY JOBS	ANG 3E551 (N=83)	ANG 3E571 (N=56)	ANG 3E591 (N=14)
I. CADD Cluster	12	5	0
II. Surveying Cluster	64	80	43
III. Entry-Level CADD Job	0	0	0
IV. Files Job	0	0	0
V. Surveying Assistant Job	7	0	0
VI. Site Developer Job	1	0	0
VII. Mobility Job	5	2	0
VIII. Radar Evaluation Job	0	0	0
IX. Project Management Cluster	1	9	21
X. Service Contracts Cluster	0	0	0
XI. Supervisor Cluster	0	4	14
XII. Staff Program Managers Job	0	0	0
Not Grouped	10	0	22

TABLE 23

RELATIVE PERCENT TIME SPENT ON DUTIES BY ANG DAFSC GROUPS

DUTIES		ANG 3E551 (N=83)	ANG 3E571 (N=56)	ANG 3E591 (N=14)
A	PERFORMING SURVEYING ACTIVITIES	30	18	11
B	PERFORMING MANUAL DRAFTING ACTIVITIES	13	11	5
C	PERFORMING CADD SYSTEMS ACTIVITIES	15	11	4
D	PERFORMING ENGINEERING DESIGN OR PROJECT PLANNING ACTIVITIES	4	7	5
E	PERFORMING CONTRACT MANAGEMENT OR SABER ACTIVITIES	3	8	8
F	PERFORMING MAINTENANCE ENGINEERING OR SERVICE CONTRACTS ACTIVITIES	0	*	*
G	PERFORMING MATERIAL TESTING	*	*	*
H	PERFORMING GROUND RADAR EVALUATIONS	*	*	*
I	PERFORMING ENGINEERING-SPECIFIC MOBILITY OR CONTINGENCY ACTIVITIES	13	13	11
J	PERFORMING GENERAL MOBILITY AND CONTINGENCY ACTIVITIES	12	10	13
K	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3	10	24
L	PERFORMING TRAINING ACTIVITIES	3	7	12
M	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	*	1	2
N	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	3	4

TABLE 24

REPRESENTATIVE TASKS PERFORMED BY ANG 3E551 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=83)
A0042	Set up or tear down surveying equipment	83
B0073	Reproduce drawings	80
A0040	Record field notes	76
A0027	Measure horizontal distances	76
A0009	Compute horizontal or vertical distances	75
A0001	Collect reconnaissance information on sites to be surveyed	72
B0050	Maintain drawing files, other than computer drawing files	71
J0327	Erect tents	71
A0003	Communicate using standardized surveying hand signals	71
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	70
I0302	Plot airfield damage assessments	69
I0304	Select MOS candidates	69
A0024	Manually input field data into CADD system	67
C0090	Maintain computer drawing files	66
B0049	Interpret engineering sketches	66
I0299	Perform airfield damage assessments	65
J0324	Don or doff chemical warfare personal protective clothing	63
A0035	Perform site reconnaissance	63
C0083	Develop site plans in CADD systems	59
A0033	Perform leveling operations	59
C0101	Update as-built drawings in CADD systems	55
E0164	Interpret blueprints	53
C0082	Develop modifications from existing drawings in CADD systems	53
C0074	Complete architectural plans in CADD systems	53

* Average Number of Tasks Performed - 74

TABLE 25

REPRESENTATIVE TASKS PERFORMED BY ANG 3E571 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=56)
B0073	Reproduce drawings	91
B0049	Interpret engineering sketches	88
A0042	Set up or tear down surveying equipment	88
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	86
J0327	Erect tents	84
I0296	Lay out minimum operating strip (MOS) centerlines	82
I0304	Select MOS candidates	80
A0035	Perform site reconnaissance	80
I0302	Plot airfield damage assessments	79
I0299	Perform airfield damage assessments	79
L0418	Conduct on-the-job training (OJT)	77
B0050	Maintain drawing files, other than computer drawing files	77
J0324	Don or doff chemical warfare personal protective clothing	77
I0300	Perform crater profile measurements (CPMs)	77
A0040	Record field notes	77
E0164	Interpret blueprints	73
A0032	Perform as-built surveys	73
L0419	Counsel trainees on training progress	70
I0290	Inspect mobility bags or kits	70
C0090	Maintain computer drawing files	66
C0101	Update as-built drawings in CADD systems	64
C0082	Develop modifications from existing drawings in CADD systems	61
C0102	Update record drawings in CADD systems	55
L0430	Maintain training records or files	54

* Average Number of Tasks Performed - 124

TABLE 26

REPRESENTATIVE TASKS PERFORMED BY ANG 3E591 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=14)
L0418	Conduct on-the-job training (OJT)	86
J0324	Don or doff chemical warfare personal protective clothing	86
K0376	Determine or establish work assignments or priorities	86
L0419	Counsel trainees on training progress	86
K0398	Inspect personnel for compliance with military standards	86
L0415	Brief personnel concerning training programs or matters	79
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	79
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	79
K0366	Assign personnel to work areas or duty positions	79
E0164	Interpret blueprints	79
K0374	Counsel subordinates concerning personal matters	79
K0382	Develop or establish work schedules	71
K0399	Interpret policies, directives, or procedures for subordinates	71
I0302	Plot airfield damage assessments	71
I0284	Develop bare base plans	71
A0025	Mark and set construction stakes	64
D0114	Estimate cost elements, such as materials, equipment, or labor	64
I0304	Select MOS candidates	64
B0073	Reproduce drawings	64
K0381	Develop or establish work methods or procedures	64
M0444	Maintain administrative files	57
I0282	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	57

* Average Number of Tasks Performed – 122

TABLE 27

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ANG DAFSCs 3E551 AND 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ANG 3E551 (N=83)	ANG 3E571 (N=56)	DIFFERENCE
No tasks identified as predominantly performed by 5-skill level members				
L0419	Counsel trainees on training progress	13	70	-56
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	4	55	-52
K0374	Counsel subordinates concerning personal matters	4	54	-50
K0376	Determine or establish work assignments or priorities	10	57	-48
L0418	Conduct on-the-job training (OJT)	33	77	-44
L0420	Determine training requirements	11	52	-41
K0366	Assign personnel to work areas or duty positions	8	48	-40
K0412	Write recommendations for awards or decorations	5	45	-40
K0398	Inspect personnel for compliance with military standards	13	54	-40

TABLE 28

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ANG DAFSCs 3E571 AND 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ANG 3E571 (N=56)	ANG 3E591 (N=14)	DIFFERENCE
B0048	Hand letter drawings	75	36	39
A0032	Perform as-built surveys	73	36	38
A0040	Record field notes	77	43	34
C0082	Develop modifications from existing drawings in CADD systems	61	29	32
A0042	Set up or tear down surveying equipment	88	57	30
I0297	Lay out taxiway and runway traffic markings	71	43	29
N0464	Pick up, deliver, or store equipment, tools, or supplies	36	7	29
K0367	Assign sponsors for newly assigned personnel	23	64	-41
K0397	Initiate actions required due to substandard performance of personnel	27	64	-38
M0444	Maintain administrative files	20	57	-38
K0371	Conduct supervisory performance feedback sessions	25	57	-32
N0454	Evaluate serviceability of equipment, tools, or supplies	32	64	-32
K0398	Inspect personnel for compliance with military standards	54	86	-32

TABLE 29

DISTRIBUTION OF AFRC DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT RESPONDING)

SPECIALTY JOBS	AFRC 3E551 (N=40)	AFRC 3E571 (N=32)	AFRC 3E591 (N=5)
I. CADD Cluster	8	0	0
II. Surveying Cluster	63	84	100
III. Entry-Level CADD Job	0	0	0
IV. Files Job	0	0	0
V. Surveying Assistant Job	5	0	0
VI. Site Developer Job	3	0	0
VII. Mobility Job	5	0	0
VIII. Radar Evaluation Job	0	0	0
IX. Project Management Cluster	0	3	0
X. Service Contracts Cluster	0	0	0
XI. Supervisor Cluster	0	13	0
XII. Staff Program Managers Job	0	0	0
Not Grouped	16	0	0

TABLE 30

RELATIVE PERCENT TIME SPENT ON DUTIES BY AFRC DAFSC GROUPS

DUTIES		AFRC 3E551 (N=40)	AFRC 3E571 (N=32)	AFRC 3E591 (N=5)
A	PERFORMING SURVEYING ACTIVITIES	30	16	16
B	PERFORMING MANUAL DRAFTING ACTIVITIES	9	6	5
C	PERFORMING CADD SYSTEMS ACTIVITIES	15	6	6
D	PERFORMING ENGINEERING DESIGN OR PROJECT PLANNING ACTIVITIES	2	4	5
E	PERFORMING CONTRACT MANAGEMENT OR SABER ACTIVITIES	1	3	4
F	PERFORMING MAINTENANCE ENGINEERING OR SERVICE CONTRACTS ACTIVITIES	*	*	0
G	PERFORMING MATERIAL TESTING	*	*	1
H	PERFORMING GROUND RADAR EVALUATIONS	*	*	0
I	PERFORMING ENGINEERING-SPECIFIC MOBILITY OR CONTINGENCY ACTIVITIES	18	17	13
J	PERFORMING GENERAL MOBILITY AND CONTINGENCY ACTIVITIES	14	13	13
K	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	4	21	21
L	PERFORMING TRAINING ACTIVITIES	2	9	10
M	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	2	2	3
N	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	2	3

* Less than one percent

TABLE 31

REPRESENTATIVE TASKS PERFORMED BY AFRC 3E551 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=40)
A0042	Set up or tear down surveying equipment	85
I0302	Plot airfield damage assessments	83
I0299	Perform airfield damage assessments	78
A0027	Measure horizontal distances	78
A0040	Record field notes	78
J0327	Erect tents	75
I0304	Select MOS candidates	75
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	75
I0296	Lay out minimum operating strip (MOS) centerlines	75
A0001	Collect reconnaissance information on sites to be surveyed	75
J0324	Don or doff chemical warfare personal protective clothing	70
I0300	Perform crater profile measurements (CPMs)	70
C0074	Complete architectural plans in CADD systems	65
A0024	Manually input field data into CADD system	65
B0073	Reproduce drawings	65
I0289	Identify and report suspected unexploded ordnance (UXO)	65
A0003	Communicate using standardized surveying hand signals	63
A0036	Perform topographic surveys	58
A0018	Develop maps or plans with surveying or architectural software	58
B0050	Maintain drawing files, other than computer drawing files	55
J0353	Perform survival recovery center (SRC) operations	53
C0101	Update as-built drawings in CADD systems	48

* Average Number of Tasks Performed - 70

TABLE 32

REPRESENTATIVE TASKS PERFORMED BY AFRC 3E571 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=32)
I0304	Select MOS candidates	97
I0302	Plot airfield damage assessments	97
I0299	Perform airfield damage assessments	94
J0327	Erect tents	91
I0300	Perform crater profile measurements (CPMs)	91
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	88
I0296	Lay out minimum operating strip (MOS) centerlines	88
I0284	Develop bare base plans	88
J0324	Don or doff chemical warfare personal protective clothing	84
B0049	Interpret engineering sketches	81
L0418	Conduct on-the-job training (OJT)	78
K0376	Determine or establish work assignments or priorities	78
K0371	Conduct supervisory performance feedback sessions	78
K0398	Inspect personnel for compliance with military standards	78
I0282	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	78
J0353	Perform survival recovery center (SRC) operations	75
L0428	Evaluate progress of trainees	72
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	69
L0420	Determine training requirements	66
L0430	Maintain training records or files	63
K0392	Evaluate personnel for compliance with performance standards	63
L0419	Counsel trainees on training progress	63

* Average Number of Tasks Performed – 106

TABLE 33

REPRESENTATIVE TASKS PERFORMED BY AFRC 3E591 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=5)
K0366	Assign personnel to work areas or duty positions	100
K0398	Inspect personnel for compliance with military standards	100
I0304	Select MOS candidates	100
I0299	Perform airfield damage assessments	100
I0296	Lay out minimum operating strip (MOS) centerlines	100
I0302	Plot airfield damage assessments	100
L0419	Counsel trainees on training progress	100
I0300	Perform crater profile measurements (CPMs)	100
K0374	Counsel subordinates concerning personal matters	100
I0297	Lay out taxiway and runway traffic markings	100
L0420	Determine training requirements	100
J0327	Erect tents	100
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	80
K0412	Write recommendations for awards or decorations	80
L0427	Evaluate effectiveness of training programs, plans, or procedures	80
L0430	Maintain training records or files	80
L0428	Evaluate progress of trainees	80
M0445	Maintain man-hour accounting forms	80
J0353	Perform survival recovery center (SRC) operations	80
K0371	Conduct supervisory performance feedback sessions	80
K0376	Determine or establish work assignments or priorities	80
K0369	Conduct self-inspections or self-assessments	80
I0289	Identify and report suspected unexploded ordnance (UXO)	80

* Average Number of Tasks Performed - 177

TABLE 34

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AFRC DAFSCs 3E551 AND 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		AFRC 3E551 (N=40)	AFRC 3E571 (N=32)	DIFFERENCE
C0074	Complete architectural plans in CADD systems	65	38	28
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	45	22	23
A0037	Perform field maintenance on surveying equipment, such as cleanings	48	25	23
C0077	Complete mechanical plans in CADD systems	35	13	23
L0419	Counsel trainees on training progress	10	63	-53
L0420	Determine training requirements	15	66	-51
L0418	Conduct on-the-job training (OJT)	28	78	-51
K0366	Assign personnel to work areas or duty positions	10	59	-49
K0375	Determine or establish logistics requirements, such as personnel, equipment, tools, supplies, or workspace	10	59	-49
K0392	Evaluate personnel for compliance with performance standards	15	63	-48
K0387	Establish performance standards for subordinates	3	50	-48
K0382	Develop or establish work schedules	5	50	-45
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	10	53	-43

TABLE 35

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AFRC DAFSCs 3E571 AND 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		AFRC 3E571 (N=32)	AFRC 3E591 (N=5)	DIFFERENCE
J0325	Draft or write mobility or deployment after-action reports	25	*	25
C0094	Produce charts in CADD systems	25	*	25
K0411	Write or endorse military performance reports	63	40	23
A0030	Orient surveys	63	40	23
L0431	Personalize lesson plans	19	80	-61
K0390	Evaluate inspection report findings or inspection procedures	19	80	-61
K0389	Evaluate equipment development or modification data	*	60	-60
A0045	Stake out vertical alignments, such as routes, structures, or facilities	41	100	-59
J0357	Perform small crater crushed-stone repairs	22	80	-58
M0445	Maintain man-hour accounting forms	22	80	-58
K0401	Log entries in work order registers	3	60	-57
A0014	Compute traverse data	25	80	-55
N0464	Pick up, deliver, or store equipment, tools, or supplies	25	80	-55

* No Members Performed the Task

TABLE 36

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD AND ANG 3E551 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E551 (N=319)	ANG 3E551 (N=83)	DIFFERENCE
E0159	Identify contractor performance discrepancies	39	2	36
E0154	Evaluate contract progress schedules	33	1	32
E0165	Maintain records of contract changes	40	8	32
E0143	Conduct daily on-site visits	38	6	32
E0144	Coordinate construction with appropriate agencies	32	2	30
E0155	Evaluate material submittals	33	4	29
E0179	Prepare official memorandums to contracts	29	*	29
A0025	Mark and set construction stakes	22	63	-41
A0008	Compute grade-stake data	15	52	-37
A0009	Compute horizontal or vertical distances	37	75	-37
A0037	Perform field maintenance on surveying equipment, such as cleanings	24	60	-36
B0058	Manually draw civil plans	7	42	-35
B0064	Manually draw site plans	11	46	-35

* No Members Performed the Task

TABLE 37

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD AND ANG 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E571 (N=190)	ANG 3E571 (N=56)	DIFFERENCE
K0411	Write or endorse military performance reports	62	21	40
K0406	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	56	18	38
K0371	Conduct supervisory performance feedback sessions	62	25	37
K0383	Draft budget requirements	42	11	31
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	64	34	30
E0151	Coordinate use of government-furnished property (GFP) or government-furnished materials (GFMs) with appropriate agencies	43	14	29
B0064	Manually draw site plans	12	71	-59
B0048	Hand letter drawings	17	75	-58
A0042	Set up or tear down surveying equipment	32	88	-55
B0069	Manually update as-built drawings	15	70	-54
A0008	Compute grade-stake data	14	66	-52
B0057	Manually draw charts	7	57	-50

TABLE 38

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD AND ANG 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E591 (N=14)	ANG 3E591 (N=14)	DIFFERENCE
D0134	Review SOWs	86	21	64
D0108	Coordinate statements of work (SOWs) with appropriate agencies	71	14	57
K0411	Write or endorse military performance reports	71	21	50
E0169	Participate in technical reviews	71	29	43
F0209	Review PWSs	50	7	43
M0442	Initiate requests for TDY orders	57	14	43
K0380	Develop inputs to mobility, contingency, disaster preparedness, or unit emergency or alert plans	50	7	43
N0457	Inventory equipment, tools, or supplies	14	64	-50
B0069	Manually update as-built drawings	*	50	-50
A0035	Perform site reconnaissance	21	71	-50
B0056	Manually draw architectural plans	*	50	-50
A0033	Perform leveling operations	7	57	-50
B0064	Manually draw site plans	*	50	-50

* No Members Performed the Task

TABLE 39

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD AND AFRC 3E551 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E551 (N=319)	AFRC 3E551 (N=40)	DIFFERENCE
E0159	Identify contractor performance discrepancies	39	*	39
E0165	Maintain records of contract changes	40	5	35
E0143	Conduct daily on-site visits	38	3	35
E0161	Inspect construction activities for compliance with safety regulations or procedures	33	*	33
E0142	Conduct contract final acceptance inspections	32	*	32
E0168	Participate in preperformance conferences	32	*	32
E0163	Inspect construction projects for compliance with plans and specifications	34	3	31
A0025	Mark and set construction stakes	22	70	-48
A0043	Stake out building corners for new construction sites	21	58	-37
A0042	Set up or tear down surveying equipment	49	85	-36
A0040	Record field notes	41	78	-36
A0001	Collect reconnaissance information on sites to be surveyed	40	75	-35
A0029	Measure vertical distances or heights	37	70	-33

* No Members Performed the Task

TABLE 40

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD AND AFRC 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E571 (N=190)	AFRC 3E571 (N=32)	DIFFERENCE
K0406	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	56	13	44
E0141	Conduct construction contract preacceptance inspections	47	3	44
E0147	Coordinate work clearance requests with appropriate agencies	46	3	43
E0168	Participate in preperformance conferences	46	3	43
E0142	Conduct contract final acceptance inspections	49	6	43
E0144	Coordinate construction with appropriate agencies	49	6	43
D0134	Review SOWs	51	9	41
A0043	Stake out building corners for new construction sites	19	75	-56
I0300	Perform crater profile measurements (CPMs)	37	91	-53
I0284	Develop bare base plans	34	88	-53
I0299	Perform airfield damage assessments	43	94	-51
A0025	Mark and set construction stakes	21	72	-51
A0040	Record field notes	29	78	-49

TABLE 41

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AD AND AFRC 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE 3E591 (N=14)	AFRC 3E591 (N=5)	DIFFERENCE
D0134	Review SOWs	86	*	86
K0383	Draft budget requirements	64	*	64
E0159	Identify contractor performance discrepancies	57	*	57
E0142	Conduct contract final acceptance inspections	57	*	57
D0108	Coordinate statements of work (SOWs) with appropriate agencies	71	20	51
K0406	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	71	20	51
F0209	Review PWSs	50	*	50
A0020	Establish horizontal controls	14	100	-86
A0027	Measure horizontal distances	14	100	-86
A0044	Stake out horizontal alignments, such as routes, structures, or facilities	14	100	-86
A0045	Stake out vertical alignments, such as routes, structures, or facilities	14	100	-86
A0026	Measure horizontal angles	14	100	-86
A0043	Stake out building corners for new construction sites	14	100	-86

* No Members Performed the Task

TABLE 42

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ANG AND AFRC 3E551 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ANG 3E551 (N=83)	AFRC 3E551 (N=40)	DIFFERENCE
A0023	Maintain field survey files	48	28	21
A0004	Compute azimuths and bearings	58	38	20
B0071	Perform minor operator maintenance on reproduction machines	40	20	20
C0086	Draft preliminary designs for civil plans in CADD systems	48	30	18
B0058	Manually draw civil plans	42	25	17
N0454	Evaluate serviceability of equipment, tools, or supplies	24	8	17
I0286	Develop camp cantonment layouts	29	53	-24
I0303	Prepare cantonment area maps	33	53	-20
I0289	Identify and report suspected unexploded ordnance (UXO)	45	65	-20
K0372	Conduct safety inspections of equipment or facilities	8	28	-19
J0345	Perform chemical warfare agent decontamination procedures	33	50	-17
J0353	Perform survival recovery center (SRC) operations	36	53	-16

TABLE 43

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ANG AND AFRC 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ANG 3E571 (N=56)	AFRC 3E571 (N=32)	DIFFERENCE
A0037	Perform field maintenance on surveying equipment, such as cleanings	57	25	32
B0070	Manually update record drawings	54	22	32
B0071	Perform minor operator maintenance on reproduction machines	50	19	31
B0054	Manually develop modifications from existing drawings	63	31	31
C0102	Update record drawings in CADD systems	55	25	30
C0101	Update as-built drawings in CADD systems	64	34	30
K0371	Conduct supervisory performance feedback sessions	25	78	-53
K0411	Write or endorse military performance reports	21	63	-41
J0353	Perform survival recovery center (SRC) operations	46	75	-29
J0347	Perform damage control center activities	39	69	-29
K0373	Conduct supervisory orientations for newly assigned personnel	36	63	-27
K0398	Inspect personnel for compliance with military standards	54	78	-25

TABLE 44

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ANG AND AFRC 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ANG 3E591 (N=14)	AFRC 3E591 (N=5)	DIFFERENCE
L0414	Administer or score tests	36	*	36
J0325	Draft or write mobility or deployment after-action reports	29	*	29
K0383	Draft budget requirements	29	*	29
C0094	Produce charts in CADD systems	29	*	29
L0421	Develop formal course curricula, plans of instruction (POIs), or specialty training standards (STSs)	29	*	29
B0065	Manually draw structural plans	43	20	23
E0196	Update contract status in management information systems	21	*	21
N0464	Pick up, deliver, or store equipment, tools, or supplies	7	80	-73
J0349	Perform explosive ordnance reconnaissance	29	100	-71
A0038	Prepare reconnaissance reports	14	80	-66
K0390	Evaluate inspection report findings or inspection procedures	21	80	-59
J0357	Perform small crater crushed-stone repairs	21	80	-59
I0297	Lay out taxiway and runway traffic markings	43	100	-57

* No Members Performed the Task

TRAINING ANALYSIS

Occupational survey data are one of many sources of information which can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment. Factors which may be used in evaluating training include the overall description of the work being performed by first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-enlistment (1-48 months TAFMS) members performing specific tasks, as well as TE and TD ratings (previously explained in the **SURVEY METHODOLOGY** section).

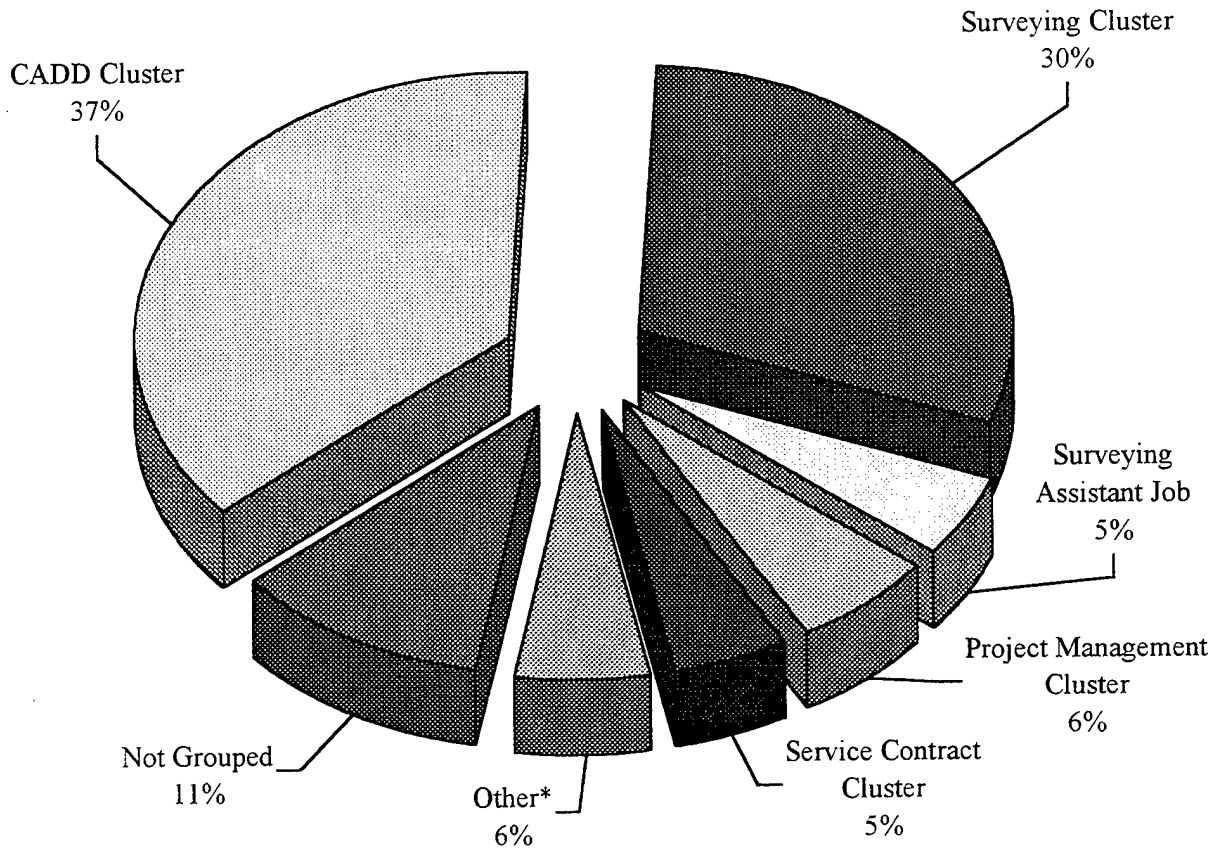
First-Enlistment Personnel

In this study, there are 241 members in their first-enlistment (1-48 months TAFMS), representing 25 percent of the total survey sample and 34 percent of the active duty sample. Figure 2 reflects the distribution of first-enlistment personnel within the career ladder clusters and jobs. Sixty-seven percent of these airmen are in the core technical clusters (CADD and Surveying). Table 45 displays the relative percent of time spent on duties by first-enlistment personnel. Reviewing the table, first-enlistment personnel spend 30 percent of their time performing CADD technical tasks of Duty C and another 23 percent performing surveying tasks of Duty A. Eleven percent of their time is spent performing in Duty B, the tasks of manual drafting.

Table 46 lists representative tasks performed by first-enlistment personnel. The highest performed tasks are standard technical tasks associated with the career field. Note the high reliance on CADD systems and a surveying background.

Tables 47 through 49 display many other characteristics of the first-enlistment group. Table 47 displays the main types of CADD and surveying software used by first-term airmen. Table 48 shows, by percent members performing, various breakouts of surveying equipment used by these members. Included in the table are percentages of first-enlistment members who use specific pieces of surveying equipment in the course of their normal job, the primary equipment that they use, and the surveying equipment they use most while on contingencies. Table 48 shows that the highest percentage of first-enlistment airmen use the Total Station with Data Recorder as their primary surveying equipment. Table 49 displays the top equipment used by first-term airmen.

DISTRIBUTION OF 3E5X1 FIRST-ENLISTMENT PERSONNEL ACROSS SPECIALTY JOBS (N = 241)



* Other includes *Entry-Level CADD, Files, Site Developer,* and *Mobility Jobs.*

FIGURE 2

TABLE 45

RELATIVE PERCENT TIME SPENT ON DUTIES BY
AD FIRST-ENLISTMENT PERSONNEL
(N=241)

	DUTIES	PERCENT TIME SPENT
A	PERFORMING SURVEYING ACTIVITIES	23
B	PERFORMING MANUAL DRAFTING ACTIVITIES	11
C	PERFORMING CADD SYSTEMS ACTIVITIES	30
D	PERFORMING ENGINEERING DESIGN OR PROJECT PLANNING ACTIVITIES	3
E	PERFORMING CONTRACT MANAGEMENT OR SABER ACTIVITIES	9
F	PERFORMING MAINTENANCE ENGINEERING OR SERVICE CONTRACTS ACTIVITIES	4
G	PERFORMING MATERIAL TESTING	*
H	PERFORMING GROUND RADAR EVALUATIONS	*
I	PERFORMING ENGINEERING-SPECIFIC MOBILITY OR CONTINGENCY ACTIVITIES	8
J	PERFORMING GENERAL MOBILITY AND CONTINGENCY ACTIVITIES	6
K	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2
L	PERFORMING TRAINING ACTIVITIES	*
M	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	*
N	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2

* Less than one percent

TABLE 46

REPRESENTATIVE TASKS PERFORMED BY AFSC 3E5X1
AD FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=241)
B0073	Reproduce drawings	77
C0090	Maintain computer drawing files	76
C0101	Update as-built drawings in CADD systems	70
A0042	Set up or tear down surveying equipment	69
C0074	Complete architectural plans in CADD systems	65
B0050	Maintain drawing files, other than computer drawing files	62
C0102	Update record drawings in CADD systems	61
C0082	Develop modifications from existing drawings in CADD systems	58
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	56
A0027	Measure horizontal distances	56
A0003	Communicate using standardized surveying hand signals	56
B0049	Interpret engineering sketches	54
A0024	Manually input field data into CADD system	53
C0076	Complete electrical plans in CADD systems	52
C0078	Complete structural plans in CADD systems	52
A0018	Develop maps or plans with surveying or architectural software	51
C0075	Complete civil plans in CADD systems	50
C0099	Scan drawings into CADD systems	50
C0083	Develop site plans in CADD systems	50
C0077	Complete mechanical plans in CADD systems	49
I0299	Perform airfield damage assessments	49
A0040	Record field notes	49
C0085	Draft preliminary designs for architectural plans in CADD systems	46
C0091	Measure irregular lines in CADD systems, such as broken lines or curves	46

* Average Number of Tasks Performed - 52

TABLE 47

CADD / SURVEYING SOFTWARE USED BY PERCENT OF AD FIRST-ENLISTMENT AFSC 3E5X1 PERSONNEL

CADD / SURVEYING	SOFTWARE	1ST ENL (N=241)
CADD	AutoCAD	76
CADD	Intergraph	29
CADD	None used	5
SURVEYING	Auto Desk	14
SURVEYING	Soft Desk	11
SURVEYING	Eagle Point	5
SURVEYING	Co Go	2
SURVEYING	Terra Model	2
SURVEYING	Wild Soft	1
SURVEYING	Other	16
SURVEYING	None used	49

TABLE 48

SURVEYING INSTRUMENT USED, PRIMARY SURVEYING EQUIPMENT USED, AND PRIMARY SURVEYING EQUIPMENT USED DURING CONTINGENCIES BY PERCENT FIRST-ENLISTMENT AFSC 3E5X1 PERSONNEL

SURVEYING EQUIPMENT	1st ENL EQUIPMENT USED (N=241)	1st ENL PRIMARY EQUIPMENT (N=241)	1st ENL CONTINGENCY EQUIPMENT (N=241)
Total Station with Data Recorder	63	43	7
Auto Level	62	7	2
Transit	31	2	1
Theodolite with EDM	31	2	0
Total Station without Data Recorder	25	17	2
Global Positioning Survey System (GPSS)	24	7	1
Theodolite without EDM	18	2	1
Electronic Distance Meter (EDM)	15	0	0
None	15	20	8
No Answer	0	0	78

TABLE 49

TOP EQUIPMENT USED BY PERCENT OF AD
FIRST-ENLISTMENT AFSC 3E5X1 PERSONNEL

EQUIPMENT	1ST ENL (N=241)
Calculators	83
Scales, Engineering	81
Scales, Architectural	78
Tripods	75
Tape Measures	68
Mechanical Pencils	65
Prisms	63
Radios	61
Plotters	60
Steel Tapes	59
Range Poles	58
Recorders, Data	57
Precision Rods, such as Philadelphia Rods	57
Level Rods	56
Plumb Bobs	56
Theodolites	54
Scanners	50
Personal Computers	47
Reproduction Machine	47
Rod Targets	47
Taping Arrows	46
Templates	45
Cameras	45
Drawing Tables	44
Tape Clamps	40
Drafting Machines	36
Laptop Computers	36
Levels, Hand	34
Hammers, Sledge	29
Global Positioning System (GPS) Equipment	28
Geodetic Total Stations	27
Lettering Set with Lettering Guides	24
Levels, Self-Leveling	22
Levels, Dumpy or Engineer	17
Scales, Electronic	17
Magnetic Compasses	16
Machetes	16
Stadia Boards or Rods	15
Transits, other than Pocket	15

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank-ordering of those tasks in the JI considered important for first-enlistment personnel, along with a measure of the difficulty of the JI tasks. When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 2, AETCI 36-2601, and allows course personnel to quickly focus their attention on those tasks which are most likely to qualify for initial resident course consideration.

Some of the tasks rated highest in TE are shown in Table 50. Many of the procedures using CADD systems should be highly stressed at the 3-skill level technical school according to senior raters. All of the top tasks listed in the table are performed by a relatively high number of first-enlistment members adding strength to the TE ratings.

Some engineering design, ground radar evaluation, and material testing tasks received the highest TD ratings as shown in Table 51. Very few entry-level airmen perform the most difficult tasks. The small percentage of first-enlistment performing suggests that these tasks could be more appropriately taught in OJT than at a formal technical training school.

Various lists of tasks, accompanied by TE and TD ratings and, where appropriate, ATI information, are contained in the TRAINING EXTRACT package and should be reviewed in detail by training school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.)

TABLE 50

TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 3E5X1 1ST JOB (N=135)	PERCENT MEMBERS PERFORMING 3E5X1 1ST ENL (N=241)	TASK DIFF
C0078	Complete structural plans in CADD systems	6.86	51	52	5.53
C0083	Develop site plans in CADD systems	6.82	44	50	5.00
C0075	Complete civil plans in CADD systems	6.79	47	50	5.43
I0304	Select MOS candidates	6.77	41	43	5.81
C0077	Complete mechanical plans in CADD systems	6.68	48	49	5.57
C0076	Complete electrical plans in CADD systems	6.68	51	52	5.52
I0302	Plot airfield damage assessments	6.66	53	53	4.47
A0026	Measure horizontal angles	6.64	44	49	3.62
C0101	Update as-built drawings in CADD systems	6.59	70	70	4.21
A0027	Measure horizontal angles	6.57	53	56	3.31
C0074	Complete architectural plans in CADD systems	6.55	65	65	5.39
I0299	Perform airfield damage assessments	6.52	52	49	4.92
C0102	Update record drawings in CADD systems	6.52	62	61	4.19
A0028	Measure vertical angles	6.50	40	45	3.65
C0084	Develop topographic maps in CADD systems	6.36	31	35	5.52
C0090	Maintain computer drawing files	6.36	74	76	4.12
A0033	Perform leveling operations	6.34	30	35	3.82
A0040	Record field notes	6.30	45	49	3.29

* **Average TE Rating is 2.57; Standard Deviation is 1.63; High = 4.20**

TABLE 51

TASKS RATED HIGHEST IN TASK DIFFICULTY

TASKS		TASK DIFF	PERCENT MEMBERS PERFORMING 3E5X1 1ST JOB (N=135)	3E5X1 1ST ENL (N=241)	3E531 (N=193)	3E551 (N=319)	3E571 (N=190)	TRNG EMPH
D0123	Prepare project specifications	7.36	1	2	2	14	29	1.98
D0111	Create designs for electrical plans	7.33	7	10	8	14	19	1.75
H0272	Compute solar data	7.26	0	0	0	2	1	0.79
D0112	Create designs for mechanical plans	7.17	6	9	8	12	18	1.84
D0113	Create designs for structural plans	7.15	4	9	9	12	18	1.95
A0015	Compute vertical curves	7.06	16	17	15	9	8	3.39
D0110	Create designs for civil plans	7.03	6	11	10	17	24	1.93
H0273	Compute surveyed shadow and vertical angles	7.02	1	1	2	2	2	0.93
D0109	Create designs for architectural plans	7.02	10	15	12	18	26	1.62
D0114	Estimate cost elements, such as materials, equipment, or labor	7.00	5	8	8	27	50	3.23
H0274	Construct movable radar coverage indicators	6.88	0	0	0	1	1	.77
D0124	Prepare SOWs	6.84	4	7	8	30	47	3.14
G0218	Conduct California Bearing Ratio (CBR) field tests	6.83	0	1	1	2	4	1.11
G0210	Analyze soils for specific gravity	6.82	0	1	1	2	6	1.11
G0211	Classify soils	6.82	0	2	2	3	6	1.64
B0047	Build architectural models	6.81	7	7	7	3	3	0.34
D0120	Prepare final cost estimates	6.70	4	6	5	17	36	2.32
G0216	Conduct airfield pavement condition index (PCI) surveys	6.66	3	4	3	2	4	1.07

* **Average TD Rating is 5.00, High TD is 6.00**

Specialty Training Standard (STS)

A comprehensive review of STS 3E5X1, dated April 1997, compared STS items to survey data. To assist specifically in the examination of the STS, technical school personnel from the Engineering technical training school at Fort Leonard Wood, Missouri, matched JI tasks to appropriate entries of the STS. A complete listing, displaying percent members performing tasks, TE and TD ratings for each task, along with STS matching, has been forwarded to the technical training school for use in further review of training documents. STS elements containing general knowledge information, mandatory entries, subject-matter-knowledge-only requirements, or basic supervisory responsibilities were not examined. Task knowledge and performance elements of the STS were compared against the standard set forth in AETCI 36-2601 and AFI 36-2623 (i.e., include tasks performed by the required 20 percent or more of the personnel in a skill level [criterion group] of the AFS).

Overall, the STS contains several discrepancies based on the work performed by personnel in this career ladder. The percent member performing data does not support four performance-coded STS entries. These entries are presented in Table 52 with their corresponding tasks, percent members performing, training emphasis, and task difficulty data. Note that each of the tasks was rated as having above average training emphasis and high to above average task difficulty, but fewer than 20 percent of 3-skill level members performing. Career field personnel should reevaluate the performance coding of these four entries.

Tasks not referenced to any performance-coded element of the STS are listed at the end of the STS computer listing. These tasks were reviewed to determine if there were any tasks concentrated around any particular function or job. Examples of those technical tasks performed by 20 percent or more respondents of the STS target groups, but which were not referenced to any STS element, are displayed in Table 53. Note the high training emphasis ratings for all tasks in the table. Career field and functional managers should review these not referenced tasks to determine if inclusion in the STS is justified.

Course writers at the technical school similarly matched performance-coded entries from POI J5ABA3E531-000, dated May 1998, to the tasks from the Job Inventory. Survey data revealed many discrepancies between the POI and first-enlistment job performance. Table 54 displays the ten POI entries not supported by the data. Most of the entries were related to the surveying aspect of the career field. Though the percent member performing numbers were low, the training emphasis was generally above average or high. Technical school personnel should reconsider each highlighted entry for potential POI downgrading to a knowledge level. Considerations should include the data as well as safety issues, regulations, and the knowledge required from the technical school that prepares individuals for contingencies.

Many tasks were not matched to the performance-coded elements in the POI. A list of these tasks is included at the back of the POI computer printout. Table 55 presents examples of tasks with high percent members performing that were not matched to the POI. Technical school training personnel should review the complete listing and consider those tasks performed by high percentages of personnel for inclusion in the POI.

TABLE 52

PERFORMANCE-CODED STS 3E5X1 ENTRIES NOT SUPPORTED
(LESS THAN 20 PERCENT) BY OCCUPATIONAL SURVEY RESULTS
(PERCENT MEMBERS PERFORMING)

TASKS				PERCENT MEMBERS PERFORMING			
			TRNG EMPH	3-SKL LVL (N=193)	5-SKL LVL (N=319)	7-SKL LVL (N=190)	TASK DIFF
12.1.8	**Compute earth work volumes**	**2b b**					
A0006	Compute cross-section end areas		3.34	14	13	12	6.11
A0007	Compute earthwork volumes		3.62	14	12	16	6.04
12.2.5	**Compute vertical curve data**	**2b/b b**					
A0015	Compute vertical curve data		3.39	15	9	8	7.06
15.5	**Operate GIS system**	**2b/X B**					
A0046	Update geographical information systems (GISs)		3.93	11	13	8	6.19
19.3.1	**Perform facility and infrastructure damage assessment**	**2b/X B**					
J0306	Assess base facility damage		3.38	12	12	18	5.05
*	**Average TE Rating = 2.57, Standard Deviation = 1.63, High TE = 4.20**						
*	**Average TD Rating = 5.00, Standard Deviation = 1.00, High TD = 6.00**						

TABLE 53

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE AD GROUP MEMBERS AND NOT REFERENCED TO THE STS (PERCENT MEMBERS PERFORMING)

TASKS		TRNG EMPH	PERCENT MEMBERS PERFORMING 3-SKL LVL (N=193)	5-SKL LVL (N=319)	7-SKL LVL (N=190)	TASK DIFF
A0002	Collect and download electronic data into CADD systems	5.23	56	39	29	5.02
A0018	Develop maps or plans with surveying or architectural software	5.02	51	36	30	5.77
A0024	Manually input field data into CADD systems	5.36	52	40	36	4.80
B0049	Interpret engineering sketches	5.21	52	47	52	4.81
B0050	Maintain drawing files, other than computer drawing files	4.71	62	40	35	2.71
B0069	Manually update as-built drawings	4.70	30	18	15	4.06
B0073	Reproduce drawings	4.80	77	61	53	2.04
E0164	Interpret blueprints	5.64	33	52	61	5.25
I0282	Compute repair quality criteria for rapid runway repair	5.61	30	42	43	5.82
I0297	Layout taxiway and runway traffic markings	4.98	28	32	34	4.79
I0304	Select MOS candidates	6.77	40	54	52	5.81

* **Average TE Rating = 2.57, Standard Deviation = 1.63, High TE = 4.20**

* **Average TD Rating = 5.00, Standard Deviation = 1.00, High TD = 6.00**

TABLE 54

PERFORMANCE-CODED POI J5ABA3E531-000 ENTRIES NOT SUPPORTED
(LESS THAN 30 PERCENT) BY OCCUPATIONAL SURVEY RESULTS
(PERCENT MEMBERS PERFORMING)

TASKS		TRNG EMPH	PERCENT MEMBERS PERFORMING 1st Job (N=135)	1st Enl (N=241)	TASK DIFF
B.1.A	**Use standard drafting equipment to produce a multi-view drawing of a mechanical object**				
B0048	Hand letter drawings	3.50	24	24	2.67
B0060	Manually draw mechanical plans	4.16	8	10	4.88
B0062	Manually draw orthographic projections	2.82	1	2	5.16
B0067	Manually measure irregular lines, such as broken lines or curves	2.98	9	10	4.41
B.2	**Use a computer work station w/ installed CAD application software, drawing specifications, a dimensioned sketch, and written instructions to produce a mechanical multi-view drawing showing minimum of two views**				
C0096	Produce orthographic projections in CADD systems	3.82	11	13	5.48
B.7.B	**Given project plans, field note data, a calculator, horizontal curve formulas and computation sheets, and FM 5-233, compute horizontal curves for a proposed road in accordance w/ FM 5-233**				
A0010	Compute horizontal curve data	3.64	18	22	6.57
B.8.B	**Given a drawing table, standard drafting equipment, project/road field data, a calculator, and FM 5-233, draw plan and profile views of a road**				
B0058	Manually draw civil plans	4.05	7	7	4.53
B.8.C	**Given drawing table, standard drafting equipment, project/road field data, a calculator, and FM 5-233, compute and plot final gradeline to include vertical curves**				
A0015	Compute vertical lines	3.39	16	17	7.06
*	**Average TE Rating = 2.57, Standard Deviation = 1.63, High TE = 4.20**				
*	**Average TD Rating = 5.00, Standard Deviation = 1.00, High TD = 6.00**				

TABLE 54 (CONTINUED)

PERFORMANCE-CODED POI J5ABA3E531-000 ENTRIES NOT SUPPORTED
(LESS THAN 30 PERCENT) BY OCCUPATIONAL SURVEY RESULTS
(PERCENT MEMBERS PERFORMING)

TASKS		TRNG EMPH	PERCENT MEMBERS PERFORMING 1st Job (N=135)	1st Enl (N=241)	TASK DIFF
B.9.A	**Given necessary field data, a calculator, drafting table and equipment, and FM 5-233, draw a cross-section in accordance with FM 5-233**				
B0058	Manually draw civil plans	4.05	7	7	4.53
B.9.B	**Given plotted cross-sections, a calculator, and FM 5-233, compute end areas to the nearest square foot and earthwork volumes to the nearest cubic yard in accordance with FM 5-233**				
A0006	Compute cross-section end areas	3.34	16	17	6.11
B.9.C	**Given a set of project plans, field notes, an auto-level with tripod, a Philadelphia rod, a 100 foot tape, a hammer, survey stakes, a calculator, and FM 5-233, compute and set slope and grade stakes for road project**				
A0008	Compute grade stake data	4.25	16	20	5.55
B.10.A	**Given a T-16 Theodolite w/ tripod, and auto-level w/ tripod, a Philadelphia rod, project field data, a tape set, survey stakes, a hammer, batter board lumber, calculator, and FM 5-233, layout a building site**				
A0043	Stake out building corners for new construction sites	5.16	24	28	4.32
A0045	Stake out vertical alignments, such as routes, structures, or facilities	4.48	11	15	5.20
B.10.B	**Given a T-16 Theodolite w/ tripod, and auto-level w/ tripod, a Philadelphia rod, project field data, a tape set, survey stakes, a hammer, batter board lumber, calculator, and FM 5-233, layout a sewer line for a proposed building**				
A0045	Stake out vertical alignments, such as routes, structures, or facilities	4.48	11	15	5.20
*	**Average TE Rating = 2.57, Standard Deviation = 1.63, High TE = 4.20**				
*	**Average TD Rating = 5.00, Standard Deviation = 1.00, High TD = 6.00**				

TABLE 55

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE FIRST-ENLISTMENT GROUP MEMBERS AND NOT REFERENCED TO THE POI (PERCENT MEMBERS PERFORMING)

TASKS		TRNG EMPH	PERCENT MEMBERS PERFORMING 1st Job (N=135)	PERCENT MEMBERS PERFORMING 1st Enl (N=241)	TASK DIFF
A0001	Collect reconnaissance information on sites to be surveyed	3.23	39	45	3.83
A0009	Compute horizontal or vertical distances	5.95	44	49	4.18
A0024	Manually input field data into CADD system	5.36	53	53	4.80
A0037	Perform field maintenance on surveying equipment, such as cleanings	4.34	41	40	3.32
B0049	Interpret engineering sketches	5.21	51	54	4.81
B0050	Maintain drawing files, other than computer drawing files	4.71	63	62	2.71
C0075	Complete civil plans in CADD systems	6.79	47	50	5.43
C0076	Complete electrical plans in CADD systems	6.68	51	52	5.52
C0077	Complete mechanical plans in CADD systems	6.68	48	49	5.57
C0078	Complete structural plans in CADD systems	6.86	51	52	5.53
C0082	Develop modifications from existing drawings in CADD systems	5.68	60	58	4.65
C0083	Develop site plans in CADD systems	6.82	44	50	5.00
C0090	Maintain computer drawing files	6.36	74	76	4.12
C0101	Update as-built drawings in CADD systems	6.59	70	70	4.21

* **Average TE Rating = 2.57, Standard Deviation = 1.63, High TE = 4.20**

* **Average TD Rating = 5.00, Standard Deviation = 1.00, High TD = 6.00**

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey booklet to provide indications of job satisfaction.

Table 56 presents job satisfaction data for AFSC 3E5X1 TAFMS groups, together with TAFMS data for a comparative sample of Support career ladders surveyed in 1998. All enlistment groups gave comparable ratings to their Support counterparts. However, minor differences emerged for the second-enlistment 3E5X1 airmen. Second-enlistment Engineering airmen did rate their utilization of training ten percentage points lower than their Support peers and reported slightly lower reenlistment intentions. With 51 percent of the members planning to separate at their next reenlistment decision, the career field has potential manning problems.

An indication of how job satisfaction perceptions have changed over time is provided in Table 57, where TAFMS data for the current survey respondents are again presented, along with data from the last occupational survey report. The table shows comparative ratings for all TAFMS groups in most areas, with the exception of utilization of training and reenlistment intentions. First- and second-enlistment groups claim a noticeably higher utilization of training compared to the 1997 survey. The previous survey numbers reflected the recent technical school move from Sheppard AFB, TX to its current location. Regardless of the reason, the utilization of training trend is positive for the career field. Unfortunately, reenlistment intentions are dropping for the career field, especially among first- and second term airmen.

In Table 58, a review of the job satisfaction ratings for the clusters and specialty identified in this survey reveal the lowest satisfaction ratings from the jobs performed by junior personnel. Entry-Level CADD Job and Files Job members showed the lowest job satisfaction ratings. The technical clusters (CADD and Surveying) showed mixed retention results. Only forty-six percent of the CADD Cluster and 47 percent of the Surveying Cluster plan to reenlist at their next opportunity. These relatively low reenlistment numbers are disturbing because the CADD and Surveying Clusters contain the technical core of the career field.

TABLE 56

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1999 3E5X1 (N=241)	COMP SAMPLE* (N=249)	1999 3E5X1 (N=95)	COMP SAMPLE* (N=190)	1999 3E5X1 (N=380)	COMP SAMPLE* (N=383)
EXPRESSED JOB INTEREST:						
INTERESTING	74	71	80	80	84	81
SO-SO	13	15	14	10	9	12
DULL	13	13	6	10	7	7
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	83	83	80	82	86	83
LITTLE OR NOT AT ALL	17	17	20	18	14	17
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	82	88	75	85	76	81
LITTLE OR NOT AT ALL	18	12	25	15	24	19
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	73	74	66	72	76	73
NEUTRAL	11	10	14	11	9	9
DISSATISFIED	16	16	20	17	15	18
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	43	47	49	56	62	72
NO, OR PROBABLY NO	57	53	51	44	12	11
PLAN TO RETIRE	0	0	0	0	26	17

* Comparative sample of Support career ladders surveyed in 1998 includes the 3N0X1, 3N0X2, and 3V0X2 AFSCs.

TABLE 57

COMPARISON OF CURRENT SURVEY AND PREVIOUS SURVEY BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1999 3E5X1 (N=241)	1997 3E5X1 (N=191)	1999 3E5X1 (N=95)	1997 3E5X1 (N=125)	1999 3E5X1 (N=380)	1997 3E5X1 (N=369)
EXPRESSED JOB INTEREST:						
INTERESTING	74	80	80	78	84	84
SO-SO	13	14	14	15	9	9
DULL	13	7	6	6	7	7
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	83	81	80	80	86	82
LITTLE OR NOT AT ALL	17	19	20	20	14	18
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	82	73	75	66	76	74
LITTLE OR NOT AT ALL	18	27	25	34	24	26
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	73	73	66	74	76	73
NEUTRAL	11	11	14	9	9	8
DISSATISFIED	16	16	20	17	15	19
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	43	54	49	67	62	74
NO, OR PROBABLY NO	57	46	51	33	12	7
PLAN TO RETIRE	0	0	0	0	26	18

TABLE 58

COMPARISON OF JOB SATISFACTION INDICATORS BY AD SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

	CADD Cluster (N=120)	Surveying Cluster (N=171)	Entry-Lvl CADD Job (N=6)	Files Job (N=7)	Surveying Assistant Job (N=13)	Site Developer Job (N=3)
EXPRESSED JOB INTEREST:						
INTERESTING	75	89	33	14	77	100
SO-SO	13	7	17	72	8	0
DULL	12	4	50	14	15	0
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	84	92	33	43	85	100
LITTLE OR NOT AT ALL	16	8	67	57	15	0
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	83	89	33	71	92	100
LITTLE OR NOT AT ALL	17	11	67	29	8	0
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	74	81	67	43	70	67
NEUTRAL	9	8	0	14	15	33
DISSATISFIED	17	11	33	43	15	0
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	46	47	33	29	46	33
NO, OR PROBABLY NO	51	39	67	71	54	67
WILL RETIRE	3	14	0	0	0	0

TABLE 58 (CONTINUED)

COMPARISON OF JOB SATISFACTION INDICATORS BY AD SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

	Mobility Job (N=1)	Radar Evaluation Job (N=7)	Project Managemt Cluster (N=197)	Service Contracts Cluster (N=49)	Supervisor Cluster (N=60)	Staff Prog Manager Job (N=5)
EXPRESSED JOB INTEREST:						
INTERESTING	100	71	91	61	67	60
SO-SO	0	29	7	12	20	20
DULL	0	0	2	27	13	20
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	100	86	91	63	82	20
LITTLE OR NOT AT ALL	0	14	9	37	18	80
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	100	43	81	55	65	40
LITTLE OR NOT AT ALL	0	57	19	45	35	60
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	100	71	83	47	68	40
NEUTRAL	0	0	7	12	15	20
DISSATISFIED	0	29	10	41	17	40
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	100	57	63	65	60	60
NO, OR PROBABLY NO	0	43	17	29	13	20
WILL RETIRE	0	0	20	6	27	20

IMPLICATIONS

This survey was initiated to provide current job and task data for use in evaluating the AFMAN 36-2108 *Specialty Description* and appropriate training documents.

Survey results indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed by the members of this career ladder. Personnel appear to progress through the career ladder typically, though a relatively high percentage of 9-skill level members remain in the Surveying Cluster. ANG and AFRC personnel also appear to perform more technical jobs than their AD peers, especially at higher skill levels.

Career field and training personnel should review career ladder training documents as several STS and POI performance-coded items that are not supported by percent member performing data were discovered. Training personnel should also review the unmatched task listings and consider possible STS or POI inclusion of those tasks performed by a high percentage of personnel.

Job satisfaction is comparable to other Support career fields. Reenlistment rates for first- and second-enlistment personnel are comparably lower than their counterparts in the 1997 AFSC 3E5X1 study, however utilization of training has improved. Members of the Entry-Level CADD Job and Files Job are unhappy with their job. The technical core of the career field, represented by the CADD and Surveying Clusters, display less than 50 percent retention intentions.

APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY SPECIALTY JOB GROUPS

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TABLE A1

CADD CLUSTER

TASKS		PERCENT MEMBERS PERFORMING (N=136)
C0090	Maintain computer drawing files	90
C0101	Update as-built drawings in CADD systems	90
B0073	Reproduce drawings	88
C0074	Complete architectural plans in CADD systems	83
C0102	Update record drawings in CADD systems	81
C0082	Develop modifications from existing drawings in CADD systems	76
C0076	Complete electrical plans in CADD systems	72
B0050	Maintain drawing files, other than computer drawing files	71
C0077	Complete mechanical plans in CADD systems	68
C0078	Complete structural plans in CADD systems	67
C0075	Complete civil plans in CADD systems	66
C0083	Develop site plans in CADD systems	65
A0042	Set up or tear down surveying equipment	64
B0049	Interpret engineering sketches	60
C0085	Draft preliminary designs for architectural plans in CADD systems	60
C0099	Scan drawings into CADD systems	58
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	57
C0087	Draft preliminary designs for electrical plans in CADD systems	54
C0088	Draft preliminary designs for mechanical plans in CADD systems	52
A0018	Develop maps or plans with surveying or architectural software	51
C0086	Draft preliminary designs for civil plans in CADD systems	51
C0089	Draft preliminary designs for structural plans in CADD systems	49
C0091	Measure irregular lines in CADD systems, such as broken lines or curves	48
C0098	Revise BCPs in CADD systems	34

TABLE A2

SURVEYING CLUSTER

TASKS		PERCENT MEMBERS PERFORMING (N=333)
A0042	Set up or tear down surveying equipment	94
A0027	Measure horizontal distances	90
B0073	Reproduce drawings	89
A0040	Record field notes	87
A0026	Measure horizontal angles	86
A0009	Compute horizontal or vertical distances	85
I0302	Plot airfield damage assessments	83
A0003	Communicate using standardized surveying hand signals	83
C0090	Maintain computer drawing files	82
J0327	Erect tents	82
B0050	Maintain drawing files, other than computer drawing files	81
A0029	Measure vertical distances or heights	81
B0049	Interpret engineering sketches	80
A0036	Perform topographic surveys	80
A0035	Perform site reconnaissance	80
I0304	Select MOS candidates	79
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	79
I0299	Perform airfield damage assessments	78
A0024	Manually input field data into CADD system	77
A0033	Perform leveling operations	75
J0324	Don or doff chemical warfare personal protective clothing	74
C0083	Develop site plans in CADD systems	74
I0296	Lay out minimum operating strip (MOS) centerlines	74
C0101	Update as-built drawings in CADD systems	73
I0300	Perform crater profile measurements (CPMs)	73
C0074	Complete architectural plans in CADD systems	72
C0075	Complete civil plans in CADD systems	71
C0082	Develop modifications from existing drawings in CADD systems	69
C0102	Update record drawings in CADD systems	63
C0078	Complete structural plans in CADD systems	62

TABLE A3

ENTRY-LEVEL CADD JOB

TASKS		PERCENT MEMBERS PERFORMING (N=6)
C0090	Maintain computer drawing files	100
C0082	Develop modifications from existing drawings in CADD systems	67
C0074	Complete architectural plans in CADD systems	67
B0073	Reproduce drawings	50
C0085	Draft preliminary designs for architectural plans in CADD systems	33
C0078	Complete structural plans in CADD systems	33
C0077	Complete mechanical plans in CADD systems	33
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	33
B0071	Perform minor operator maintenance on reproduction machines	33
K0398	Inspect personnel for compliance with military standards	33
A0042	Set up or tear down surveying equipment	33
I0299	Perform airfield damage assessments	33
A0003	Communicate using standardized surveying hand signals	33
C0101	Update as-built drawings in CADD systems	17
A0031	Perform aircraft accident surveys	17
A0024	Manually input field data into CADD system	17
B0050	Maintain drawing files, other than computer drawing files	17
A0019	Establish global positioning system (GPS) locations	17
I0290	Inspect mobility bags or kits	17
C0088	Draft preliminary designs for mechanical plans in CADD systems	17
E0167	Monitor construction warranties or guarantees	17
E0166	Maintain warranty or guarantee files	17
N0461	Maintain documentation on items requiring periodic inspections or calibrations	17
N0464	Pick up, deliver, or store equipment, tools, or supplies	17

TABLE A4

FILES JOB

TASKS		PERCENT MEMBERS PERFORMING (N=7)
B0073	Reproduce drawings	100
B0050	Maintain drawing files, other than computer drawing files	100
C0090	Maintain computer drawing files	86
C0101	Update as-built drawings in CADD systems	57
A0042	Set up or tear down surveying equipment	57
C0092	Prepare drawings for internet web sites	43
N0455	Identify and report equipment or supply problems	43
A0040	Record field notes	43
J0327	Erect tents	43
J0324	Don or doff chemical warfare personal protective clothing	43
C0100	Transfer drawings to internet web sites	29
N0461	Maintain documentation on items requiring periodic inspections or calibrations	29
E0194	Review work orders, plans, or specifications prior to procurement actions	29
A0003	Communicate using standardized surveying hand signals	29
N0464	Pick up, deliver, or store equipment, tools, or supplies	29
C0102	Update record drawings in CADD systems	29
D0107	Coordinate project specifications with appropriate agencies	14
D0129	Research mass storage systems, such as CD-ROMs	14
K0401	Log entries in work order registers	14
N0456	Initiate requisitions for equipment, tools, or supplies	14
B0071	Perform minor operator maintenance on reproduction machines	14
K0381	Develop or establish work methods or procedures	14
K0369	Conduct self-inspections or self-assessments	14
J0326	Erect or tear down bare base structures	14
N0457	Inventory equipment, tools, or supplies	14
N0458	Issue or log turn-ins of equipment, tools, or supplies	14

TABLE A5

SURVEYING ASSISTANT JOB

TASKS		PERCENT MEMBERS PERFORMING (N=21)
A0042	Set up or tear down surveying equipment	100
A0027	Measure horizontal distances	100
A0028	Measure vertical angles	95
A0026	Measure horizontal angles	95
A0029	Measure vertical distances or heights	90
A0009	Compute horizontal or vertical distances	76
A0040	Record field notes	71
B0073	Reproduce drawings	67
A0003	Communicate using standardized surveying hand signals	67
A0024	Manually input field data into CADD system	62
A0001	Collect reconnaissance information on sites to be surveyed	62
C0101	Update as-built drawings in CADD systems	57
B0050	Maintain drawing files, other than computer drawing files	52
C0090	Maintain computer drawing files	52
A0021	Establish vertical controls	52
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	52
A0018	Develop maps or plans with surveying or architectural software	48
A0036	Perform topographic surveys	43
A0020	Establish horizontal controls	43
A0033	Perform leveling operations	43
C0074	Complete architectural plans in CADD systems	43
A0037	Perform field maintenance on surveying equipment, such as cleanings	43
C0102	Update record drawings in CADD systems	38
A0035	Perform site reconnaissance	38
A0025	Mark and set construction stakes	38
A0004	Compute azimuths and bearings	38
A0017	Conduct slope measurements	29
A0023	Maintain field survey files	29

TABLE A6

SITE DEVELOPER JOB

TASKS		PERCENT MEMBERS PERFORMING (N=5)
B0049	Interpret engineering sketches	100
A0042	Set up or tear down surveying equipment	100
C0085	Draft preliminary designs for architectural plans in CADD systems	100
A0043	Stake out building corners for new construction sites	100
A0009	Compute horizontal or vertical distances	100
B0073	Reproduce drawings	80
C0074	Complete architectural plans in CADD systems	80
A0024	Manually input field data into CADD system	80
C0101	Update as-built drawings in CADD systems	80
C0083	Develop site plans in CADD systems	80
A0025	Mark and set construction stakes	80
A0005	Compute construction layout data	80
B0050	Maintain drawing files, other than computer drawing files	60
A0040	Record field notes	60
B0054	Manually develop modifications from existing drawings	60
B0056	Manually draw architectural plans	60
C0102	Update record drawings in CADD systems	60
E0164	Interpret blueprints	40
C0082	Develop modifications from existing drawings in CADD systems	40
L0418	Conduct on-the-job training (OJT)	40
C0089	Draft preliminary designs for structural plans in CADD systems	40
A0036	Perform topographic surveys	40
C0088	Draft preliminary designs for mechanical plans in CADD systems	40
C0086	Draft preliminary designs for civil plans in CADD systems	40
C0087	Draft preliminary designs for electrical plans in CADD systems	40
A0033	Perform leveling operations	40
C0099	Scan drawings into CADD systems	20

TABLE A7

MOBILITY JOB

TASKS		PERCENT MEMBERS PERFORMING (N=8)
J0327	Erect tents	100
A0042	Set up or tear down surveying equipment	88
I0299	Perform airfield damage assessments	88
I0302	Plot airfield damage assessments	88
I0300	Perform crater profile measurements (CPMs)	88
J0364	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	75
I0304	Select MOS candidates	75
I0296	Lay out minimum operating strip (MOS) centerlines	75
J0345	Perform chemical warfare agent decontamination procedures	75
J0342	Perform camouflage procedures	75
I0289	Identify and report suspected unexploded ordnance (UXO)	63
A0035	Perform site reconnaissance	63
A0040	Record field notes	63
I0286	Develop camp cantonment layouts	63
J0344	Perform camp security	63
A0003	Communicate using standardized surveying hand signals	63
J0349	Perform explosive ordnance reconnaissance	63
J0324	Don or doff chemical warfare personal protective clothing	50
I0290	Inspect mobility bags or kits	50
I0303	Prepare cantonment area maps	50
I0297	Lay out taxiway and runway traffic markings	50
J0340	Pack or palletize mobility or contingency equipment for shipment or movement	50
B0073	Reproduce drawings	50
A0033	Perform leveling operations	50
I0282	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	38
J0326	Erect or tear down bare base structures	38
A0018	Develop maps or plans with surveying or architectural software	38

TABLE A8

RADAR EVALUATION JOB

TASKS		PERCENT MEMBERS PERFORMING (N=7)
H0271	Collect physical radar site data	100
H0273	Compute surveyed shadow and vertical angles	100
H0279	Format field data for computer input	100
A0019	Establish global positioning system (GPS) locations	100
H0272	Compute solar data	100
H0278	Establish horizontal profiles	100
H0277	Establish baselines	100
H0270	Calculate magnetic declinations	100
A0041	Research land descriptions, section corners, or bench marks	100
A0028	Measure vertical angles	100
A0029	Measure vertical distances or heights	100
A0040	Record field notes	100
A0004	Compute azimuths and bearings	100
C0090	Maintain computer drawing files	100
H0269	Analyze radar or radio lines of sight in relation to ground elevation	86
L0418	Conduct on-the-job training (OJT)	86
A0002	Collect and download electronic data into computer aided design and drafting (CADD) systems	86
A0026	Measure horizontal angles	86
M0442	Initiate requests for TDY orders	86
H0276	Draw pictorial site plans	86
A0021	Establish vertical controls	86
A0030	Orient surveys	86
A0011	Compute level-circuit data	86
L0419	Counsel trainees on training progress	71
L0420	Determine training requirements	71
A0027	Measure horizontal distances	71
N0452	Develop equipment checklists	71
H0274	Construct movable radar coverage indicators	57
L0427	Evaluate effectiveness of training programs, plans, or procedures	57
L0428	Evaluate progress of trainees	57

TABLE A9

PROJECT MANAGEMENT CLUSTER

TASKS		PERCENT MEMBERS PERFORMING (N=207)
E0142	Conduct contract final acceptance inspections	96
E0163	Inspect construction projects for compliance with plans and specifications	95
E0164	Interpret blueprints	95
E0160	Identify on-site or design deficiencies	94
E0143	Conduct daily on-site visits	93
E0144	Coordinate construction with appropriate agencies	93
E0161	Inspect construction activities for compliance with safety regulations or procedures	92
E0159	Identify contractor performance discrepancies	92
E0165	Maintain records of contract changes	92
E0145	Coordinate contract modifications with construction managers	92
E0152	Document construction activities	91
E0154	Evaluate contract progress schedules	91
E0141	Conduct construction contract preacceptance inspections	91
E0155	Evaluate material submittals	89
E0147	Coordinate work clearance requests with appropriate agencies	86
E0168	Participate in preperformance conferences	86
E0184	Review contract progress reports	85
E0180	Prepare prefinal punch lists	84
E0140	Conduct construction contract postacceptance inspections	84
E0162	Inspect construction projects for compliance with environmental regulations or procedures	83
E0199	Verify updated as-built drawings are annotated prior to turn in	78
E0190	Review prefinal punch lists	77
E0139	Compare government cost estimates with contractor cost estimates	73
D0134	Review SOWs	71
D0133	Review project specifications	68

TABLE A10

SERVICE CONTRACTS CLUSTER

TASKS		PERCENT MEMBERS PERFORMING (N=49)
F0202	Conduct service contract inspections	100
F0204	Document service contract activities	96
F0208	Requests contract services	88
F0203	Develop performance work statements (PWSs)	88
F0201	Complete surveillance or random sampling documents for service contracts	86
F0206	Evaluate quality assurance surveillance plans (QASPs) for service contracts	84
F0209	Review PWSs	82
F0207	Prepare QASPs for service contracts	80
F0200	Analyze provisions of service contracts	73
D0124	Prepare SOWs	63
J0324	Don or doff chemical warfare personal protective clothing	49
E0185	Review contractor invoices	47
D0134	Review SOWs	45
D0108	Coordinate statements of work (SOWs) with appropriate agencies	43
I0299	Perform airfield damage assessments	41
I0302	Plot airfield damage assessments	41
I0304	Select MOS candidates	39
E0139	Compare government cost estimates with contractor cost estimates	37
D0114	Estimate cost elements, such as materials, equipment, or labor	37
E0159	Identify contractor performance discrepancies	35
E0165	Maintain records of contract changes	31
C0090	Maintain computer drawing files	29
E0189	Review official memorandums to contracts	24
E0179	Prepare official memorandums to contracts	24
E0174	Prepare change orders or modifications for awarded contracts	24
D0120	Prepare final cost estimates	24
E0143	Conduct daily on-site visits	14

TABLE A11

SUPERVISOR CLUSTER

TASKS		PERCENT MEMBERS PERFORMING (N=68)
K0374	Counsel subordinates concerning personal matters	94
K0398	Inspect personnel for compliance with military standards	90
K0376	Determine or establish work assignments or priorities	87
K0392	Evaluate personnel for compliance with performance standards	85
K0393	Evaluate personnel for promotion, demotion, reclassification, or special awards	85
K0371	Conduct supervisory performance feedback sessions	85
K0412	Write recommendations for awards or decorations	85
L0418	Conduct on-the-job training (OJT)	84
L0415	Brief personnel concerning training programs or matters	82
K0387	Establish performance standards for subordinates	82
L0419	Counsel trainees on training progress	79
K0399	Interpret policies, directives, or procedures for subordinates	79
K0411	Write or endorse military performance reports	78
K0373	Conduct supervisory orientations for newly assigned personnel	78
L0430	Maintain training records or files	75
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	75
L0420	Determine training requirements	75
K0382	Develop or establish work schedules	72
K0366	Assign personnel to work areas or duty positions	72
L0428	Evaluate progress of trainees	69
K0381	Develop or establish work methods or procedures	69
K0375	Determine or establish logistics requirements, such as personnel, equipment, tools, supplies, or workspace	69
K0406	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	69
M0444	Maintain administrative files	54

TABLE A12

STAFF PROGRAM MANAGERS JOB

TASKS		PERCENT MEMBERS PERFORMING (N=5)
F0209	Review PWSs	100
F0200	Analyze provisions of service contracts	100
F0206	Evaluate quality assurance surveillance plans (QASPs) for service contracts	80
D0134	Review SOWs	60
M0449	Write minutes of briefings, conferences, or meetings	60
F0203	Develop performance work statements (PWSs)	60
K0368	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	60
M0442	Initiate requests for TDY orders	60
K0409	Write staff studies, surveys, or routine reports, other than training or inspection reports	40
K0370	Conduct staff assistance visits, inspections, or audits	40
F0207	Prepare QASPs for service contracts	40
D0114	Estimate cost elements, such as materials, equipment, or labor	40
K0403	Review budget requirements	40
B0051	Manually construct viewgraphs	20
D0108	Coordinate statements of work (SOWs) with appropriate agencies	20
D0120	Prepare final cost estimates	20
K0398	Inspect personnel for compliance with military standards	20
L0415	Brief personnel concerning training programs or matters	20
K0412	Write recommendations for awards or decorations	20
K0408	Write job or position descriptions	20
M0434	Compile data for records, reports, logs, or trend analyses	20
K0405	Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	20
K0383	Draft budget requirements	20
D0124	Prepare SOWs	20